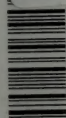
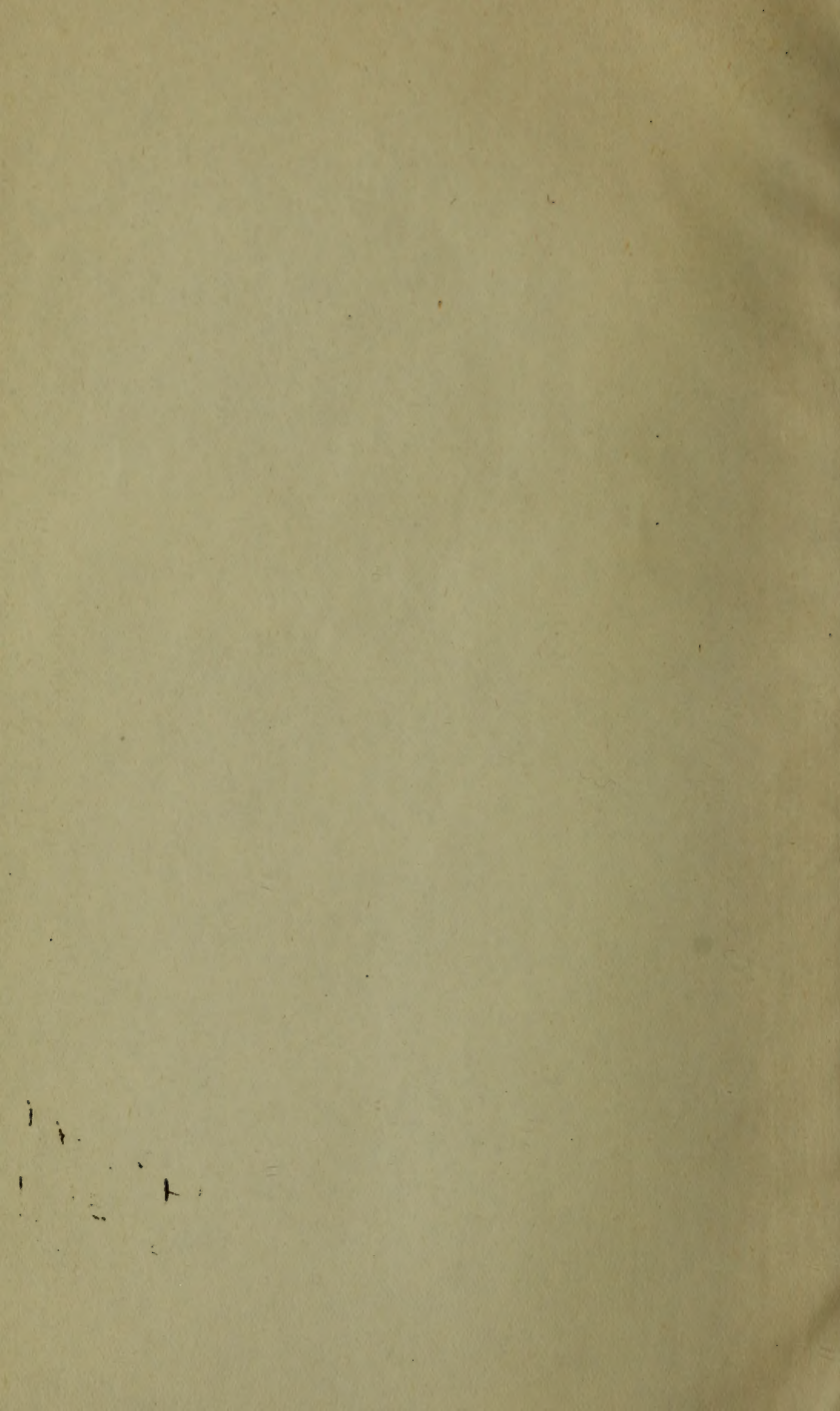




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Naval and Military Geography of the British Empire

(Considered in Relation to the War with Germany)

LECTURES
GIVEN DURING 1914-16 TO OFFICERS
OF THE NAVY AND ARMY

BY

VAUGHAN CORNISH, D.Sc.

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and the Geological Society*

WITH MAPS

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TO MY STEP-SONS

ERNEST AYSOGHE FLOYER, LIEUT. I.A.R. AND R.F.C

AND

WILLIAM ANTONY FLOYER, LIEUT. R.N.

WITH ALL GOOD WISHES

I DEDICATE THIS BOOK

V.C.

PREFACE.

IN the course of my travels I studied certain problems in strategic geography, and in 1913, at the suggestion of my friend the late Colonel Sir LONSDALE HALE, I embodied the data which I had collected and the conclusions at which I had arrived in a paper read at the Royal United Service Institution and in lectures which were delivered at the Staff College, Camberley, and other military institutions; and at the Royal Naval War College, Portsmouth. The data which I had collected received close attention from both the naval and military officers and I felt that I had done well to act on Sir LONSDALE HALE's advice.

Thus, when the war broke out, being considerably above the age at which commissions are granted or enlistment allowed, it occurred to me that I might assist as a geographical instructor in the training of the New Armies which I could not join. I accordingly offered to devote myself to the study of the geography

of the war and to deliver lectures thereon to military officers at camps and training centres. My offer was accepted by the Army Council on August 20th, 1914, I commenced the lectures in September, and since then have lectured to about ten thousand military officers.

In January, 1916, the Admiralty accepted my offer to give similar lectures to naval officers at naval ports and in the Grand Fleet.

I have here put part of these lectures into print, in which form I trust they may reach civilians as well as officers, for the strategic geography of our Empire is a subject which ought to be understood by every citizen.

VAUGHAN CORNISH, D.Sc.

WOODVILLE, CAMBERLEY,

August 14th, 1916.

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Naval and Military Geography of the British Empire

INTRODUCTION.

THESE lectures deal with the strategic geography of the British Empire in relation to Germany, and that of Germany in relation to the British Empire.

It will be found that the geographical facts here set out come under one of three heads according as they relate to, *first* the districts from which naval and military resources are obtained, *secondly* the routes along which armed forces and their supplies are moved, and, *thirdly* the positions where such movements can best be stopped.

The first category comprises recruiting areas, agricultural regions, and the districts of manufacturing arsenals and the mines from which they are supplied.

The recruiting areas, although the chief seat of military strength, have relatively little direct

importance during campaigns, because the soldiers leave them.

The agricultural regions are so wide that they cannot, generally speaking, be wholly occupied by a hostile army and do not therefore require so much defence as would be the case if they were smaller.

It is generally at straits, defiles, and other nodal* points on the routes of traffic rather than in the areas of production that such supplies can be kept from reaching their destination.

On the other hand there is usually a small district in which is situated a group of manufacturing arsenals (generally near to coal and iron mines) without which the armies of a State cannot be adequately supplied. Much time would be required to change the situation of the manufacturing arsenals, and that of the coal and iron mines cannot be changed, thus the situation of the main Technical Base of the Navy and Army is a matter of prime concern in relation to both offensive and defensive operations. At the present time, the methods of warfare having become more elaborate and

* A node, in botany, is a knob from which leaves spread out. The term is used in geography for a place towards which roads or other routes converge and from which they branch out.

artificial, the period during which a fleet or army can fight without replenishment from the manufacturing arsenals is much shorter than formerly. No geographical conditions except those of the Polar Regions are an absolute bar to the advance of a modern army, but there is a geographical condition which limits its retreat, viz. the situation of the main manufacturing arsenals and the mines which supply them. The armies of each of the two belligerents if compelled to retreat must cover in its retirement the district where its main Technical Base is situated, and cannot retreat beyond it, for if deprived of access thereto it would soon be automatically disarmed.

With regard to our second category, viz. the routes of traffic, it is to be observed that in most parts of the world they are widely spread, so that, if one be mastered by the enemy, reinforcements and supplies can go by others. Consequently the army in the field, though it may suffer inconvenience, does not incur disaster. But here and there, both by sea and land, the approach of obstructions compels all traffic to follow a single avenue, or defile, and here the advance of a force, or the transit of

its supplies, can best be blocked. Nodal positions, *i.e.* points where routes converge and from which they branch out, occur at places other than defiles where human causes, operating it may be for centuries, have determined the convergence of much traffic along many roads.

The third heading under which our facts may be grouped, that viz. of positions selected for defence, is a category dependent upon the second, for these places being where routes can best be blocked, are generally at defiles and other nodal positions. High ground is used as much as possible not only on account of the fact that ascent hampers movement, but also because an eminence gives a wider view, and it is largely for the latter advantage that eminences are often referred to as "commanding."

PART I.

THE PACIFIC OCEAN IN RELATION TO AUSTRALIA AND CANADA.

THE WHITE RACE, on which the fabric of the British Empire rests, inhabits detached territories united only by sea communications, and differs in this respect from all other modern states. It follows that the study of the strategic geography of the British Empire begins with an examination of the maritime routes by which our armies are assembled from their detached recruiting bases. To guard the same routes will also ensure the concentration of every kind of supply needed in war as soon as we make the necessary arrangements for that self-support which is requisite for real independence. The very fact that the British lands are situate in every latitude gives the Empire a variety of resources scarcely to be matched in any other State.

Growing eastward and westward from the parent island, our Empire has reached by opposite routes the opposing shores of the

Pacific Ocean. Across that great expanse, which occupies nearly half the world, Canada and Australia face one another. But whereas upon the routes followed by our forefathers, stations were established from point to point consolidating their advance, the positions finally reached in British Columbia and Eastern Australia are not further connected. Thus, had our Empire grown by advance across the Pacific, instead of up to it from either side, the dominating naval position of Pearl Harbour, in the island of Honolulu, one of the Sandwich island group, would have been our principal station and port of call, lying as it does on the direct route between Vancouver and Sydney, and at the end of that great stretch of water, empty of islands, which lies off the western shores of North America. As things are, however, this position is a principal naval station of the United States, the western outpost of their power. Thus when we come to consider the arrangements for assembling our armies wherever needed from the detached recruiting bases of our Empire, we see that the transport of Canadian troops across the Pacific to Australia, or of Australian troops by the same route to

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British Columbia, would entail not only a very long voyage but one by a route on which secure communication depends to some extent upon the grace of a foreign power.

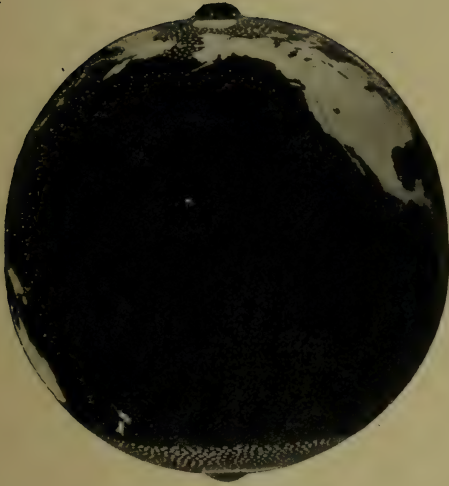
The distance moreover, which separates Vancouver from Sydney, is nearly 7000 nautical miles, or almost three times that across the Atlantic from Canada to Great Britain. From this it seems at first sight as if the task of ensuring the safety of transport in crossing the Pacific would entail upon the Navy a burden only three times as great, as far as the obstacle of space is concerned, as that of transit across the Atlantic. This, however, would really be to underestimate greatly the obstruction of the greater space. It is not sufficient to take account of the relative lengths of the passage, for the respective areas which have to be searched and swept for hostile vessels must also be computed. Thus the obstacle of space is proportional not to the linear dimensions but, more nearly, to their square, so that the naval responsibility entailed by the longer passage would be not three times but nine times as great as that of the shorter. This important point was illustrated in 1914 by the magnitude

of the sweeping operations, conducted jointly by our own and the Japanese navy, chiefly in order to locate and remove the German Squadron under Admiral von Spee which had sailed from Tsingtau and was abroad in the Pacific.

The shortest route for troops proceeding from Canada to India is from Halifax by the Suez Canal, the distance by this route to Bombay being 7,600 nautical miles as against 8,700, the distance from Vancouver across the Pacific and by Singapore to Calcutta.

In the event of the Suez route being blocked, however, the Pacific would afford a shorter passage from Canada to India, that from Vancouver by Singapore to Calcutta being some two-thousand miles less than that from Halifax by the Cape of Good Hope to Bombay. The distance *between stations*, however, is shorter by the latter route.

Neither will the Panama Canal provide shorter routes across the Pacific between Great Britain and Australia, and the reduction of distance between New Zealand and the home country does not compensate for the military disadvantages entailed by the great Pacific gap between naval stations, and by the use of a Canal under foreign control.



THE PACIFIC OCEAN.

(Photograph of a globe).

Lastly, the route from New Zealand to Great Britain across the South Pacific and by Cape Horn is only traversed in the homeward direction, even by ships of commerce, the strong west wind opposing passage from the eastward. Thus whether between Canada and Australia, Canada and India, or between Great Britain and New Zealand, the Pacific Ocean offers so little inducement for the conveyance of troops, that it may be regarded as a gap in our military communications.

THE AXIS OF THE BRITISH EMPIRE

The line joining Halifax N.S. and Wellington N.Z. is straight upon the Globe.



THE GEOGRAPHICAL AXIS OF THE BRITISH EMPIRE.

IF we wish to show all the lands of the British Empire on a map we shall find that which harmonises best with military conditions is the familiar form in which the division is made along the 180th Meridian (opposite to that which passes through London) traversing the centre of the Pacific Ocean. Such a map may be upon Mollweide's or Mercator's projection, and the latter, being that which is in most people's hands, I shall assume to be used by the reader. The Mercator projection has its faults, and they are great; but it is an old friend, and one of the advantages of an old friend is that long experience of his faults enables one to make the necessary allowance for them.

When we try to represent the world as flat, which it is not, we produce something very similar to the picture which was in the minds of primitive men who thought of the world as

having edges which could not be passed. But this quaint diagram may serve to remind us by its very imperfections of certain important facts in British military geography. First it shows no road across the Pacific. Secondly, it shows no northern road from Canada to Russia, which is strategically correct, for though the distance is not great, the Polar ice is the one absolutely impassable military barrier. Lastly, it shows no approach to Australia, New Zealand or South Africa across the Antarctic regions, which, though geometrically incorrect is yet in harmony with the fact that the Antarctic Continent and its surrounding ice pack are impassable military obstacles.

On the Navy League Map, and others which are of Mercator projection and are divided along the 180th meridian, we see the British lands grouped on the opposing shores not of three oceans but of two, the Atlantic and Indian, the principal members being the British Isles and Canada on opposite shores of the North Atlantic ; and South Africa, India and Australasia at the three corners of the triangular Indian Ocean. Of the Dependencies the most important is Egypt, situated near the middle

of the greatest maritime defile of the world, which is the shortest sea route between the north western and the south eastern half of the Empire, a defile known in its successive portions as the Western Mediterranean (as far as Malta), the Eastern Mediterranean, the Suez Canal, the Red Sea, and the Gulf of Aden.

The grouping of these lands is in fact somewhat more symmetrical than appears from the map, on which directions are distorted. Here I must observe that, serviceable as the Mercator map is, it should be supplemented, though it cannot be superseded, by the use of a small globe, not more than eight inches in diameter and not less than four. I recommend that the globe be small for two reasons. First, because large globes are not portable, and no appliance for study which is not portable is adapted to the habitual use of naval and military officers, and secondly, because the smaller globes, the eight-inch particularly, lend themselves best to the rapid determination of true directions or straight routes between distant parts of the world.

Few people except those acquainted with the practice of navigation know how to lay down

a great circle, and even those who have the knowledge, cannot, I think, draw great circles on a Mercator map of the world from mere inspection. These can, however, be laid down upon a small globe by the simple expedient of stretching tightly round it a rubber band such as is commonly used for holding letters together.* The line can then be drawn in pencil upon one of those outline maps of the world of about foolscap size which can be bought for a shilling the dozen.

Applying this method to the examination of our Mercator map of the British Empire let us draw a direct line or straight route from Wellington, in New Zealand, the south eastern terminal of our sea communications, to Halifax in Nova Scotia, a port ice-free throughout the winter, which we will take as their north-western terminal. This direct line, passing near Hobart, crosses the Indian Ocean from a point near the south-western corner of Australia to the Gulf of Aden. Thence passing up the Red Sea it crosses Lower Egypt in the vicinity of the Suez Canal and thence traverses the

* The globe should be dismounted from its axis and kept supported on a cup- or saucer-shaped stand, so that it will rest in any position and can be viewed with equal facility from any direction.

eastern and part of the western Mediterranean. The line leaves the sea to cross France, and thence passes from the Bay of Biscay across the Atlantic to Halifax. Thus it differs from the actual steaming route chiefly by avoiding the optional bend to the east entailed by the call at Colombo, and the bend to the west which is due to the obligation of passing through the Straits of Gibraltar. The length of the line is about 13,500 nautical miles, so that it extends rather more than half way round the world.

This line joining Australasia in the East with Canada in the West has the Union of South Africa to the south of it and the British Isles to the north. Passing through our Native Protectorate of Egypt it has our Native Dominions in Asia on the East and our Native Territories in Africa on the West. It is thus an axial line about which the lands of the British Empire are grouped in a roughly symmetrical manner ; Egypt, situated on the line, being the most central among the group of lands.*

* It should be further noted that Port Said is halfway between Southampton and Bombay on the sea route, the distances being Southampton to Port Said 3,043 nautical miles, Port Said to Bombay 3,047.

Near the narrowest places of the great maritime defile, fortified harbours, coaling stations and docks, at Aden, Malta, and Gibraltar assist the Navy in securing navigation against hostile ships, but the Suez Canal is a naval defile which can be mastered by land attack and which ships alone cannot sufficiently defend.

EGYPT.

THUS LOWER EGYPT is of necessity a camp of the British Army, which is charged with the defence of the Canal.

The singularly central position of the Canal, however, with reference to the British lands, and its proximity to important theatres of war around the Mediterranean, make Egypt a desirable and convenient place for the assembly of forces from our scattered recruiting bases, quite apart from the defence of the Canal, which can therefore be provided for almost incidentally in this central camp of the Empire. The district itself moreover has advantages as a camp. The control now obtained over the mosquito has made the country fairly free from Malaria, and the climate, on the whole, is not unsuited to the troops who assemble there from so many different latitudes. Tactically, the position lends itself excellently on all sides to defence against land attack, and it is only across the desert peninsula of Sinai that

it can be approached by a European army, or one relying upon land communications with a European munition base.

Thus having set out with the study of our sea communications, we have, incidentally elucidated the military importance of Egypt in other respects. It may be that Bismarck had the whole of these considerations in view when he described Egypt (according to a common quotation for which I have not a reference) as "the neck of the British Empire," but I think the phrase is misleading, for, like the Hydra, the British Empire does not depend for its life on only one neck; that is to say, putting metaphor aside, we can maintain the sea communication between the eastern and western halves of the Empire by the Cape route.

That we may have to revert to this practice during some future war must be admitted, for the safe passage of troops through the Mediterranean must be to a great extent dependent upon our relations with the Mediterranean powers.

Let us take first the case in which the Mediterranean is unsafe for transports but our Army remains in occupation of Egypt. The passage

of hostile ships through the canal would then be prevented by this army, which would be re-inforced and supplied by way of the Red Sea.

In the extreme case of a foreign power wresting Egypt from us, our Navy would have to block exit from the Red Sea at the straits of Bab-el-Mandeb,* so that at or near Aden there would have to be a naval base comparable in equipment to Gibraltar. As things are however it is at Port Said by means of the Army, and at the Straits of Gibraltar by means of the Navy, that we should hold the entries to the Atlantic and Indian oceans against Mediterranean Fleets.

Admitting that the closing of the Mediterranean to transports would deprive us of the use of Egypt as a basis for offensive operations, let us proceed to examine the extent to which the sea communications between the British Lands would be impaired.

* In the Strait lies the British island of Perim. Its distance from the African shore is about 9 miles ; the channel on the Arabian side is only about $1\frac{1}{4}$ miles wide.

SOUTH AFRICA.

PHYSICAL CONSIDERATIONS.

I SHALL deal first with the physical, secondly with the historical conditions of the strategic importance of South Africa.

Let us take as the military embarkation ports of Australasia, India, South Africa, the British Isles and Canada the following, viz. Melbourne, Bombay, Cape Town, Southampton and Halifax, N.S. The average distance of Port Said from these five is 4,770 nautical miles, of Cape Town from the other four 5,700 miles. Of the five embarkation ports Cape Town is the most central, as the accompanying table shows, its intermediate longitude more than counterbalancing the effect of the southern latitude.

TABLE SHOWING RELATIVE CENTRALITY OF
EMBARKATION PORTS AND OF PORT SAID.

The Ports are selected, as representing the five chief lands of the Empire, viz. The United Kingdom, Canada, South Africa, Australasia, and India.

The figures represent the steaming distance between ports, in nautical miles. (One nautical mile = 1.15 statute miles.)

	Miles.
Port Said to Bombay	3,047
„ „ „ Cape Town	5,346
„ „ „ Halifax, N.S.	4,571
„ „ „ Melbourne	7,842
„ „ „ Southampton	3,043

Average distance of Port Said from other ports of
embarkation, 4,770 miles.

Cape Town to Bombay	4,604
„ „ „ Halifax, N.S.	6,423
„ „ „ Melbourne	5,814
„ „ „ Southampton	5,947

Average distance of Cape Town from other ports of
embarkation, 5,617 miles.

Bombay to Cape Town	4,604
„ „ Halifax, N.S.	7,618
„ „ Melbourne	5,535
„ „ Southampton	6,090

Average distance of Bombay from other ports of
embarkation, 5,962 miles.

Southampton to Bombay	6,090
„ „ Cape Town	5,947
„ „ Halifax, N.S.	2,540
„ „ Melbourne	10,885

Average distance of Southampton from other ports of
embarkation, 6,365 miles.

	<i>Miles.</i>
Halifax, N.S. to Bombay	7,618
„ „ „ Cape Town	6,423
„ „ „ Melbourne	12,413
„ „ „ Southampton	2,540

Average distance of Halifax, N.S., from other ports of
embarkation, 7,248 miles.

Melbourne to Bombay	5,535
„ „ Cape Town	5,814
„ „ Halifax, N.S.	12,413
„ „ Southampton	10,885

Average distance of Melbourne from other ports of
embarkation, 8,662 miles.

Thus South Africa is not out of the way for the purpose of an entrepôt and dépôt, as the appearance of the Mercator map is somewhat apt to suggest, but is in fact the most central position of any British land which is a considerable Recruiting Base, although less central than Egypt.

The line of passage most affected by the loss of the Canal route is that between Southampton and Bombay which would be increased from 6000 to 10,500 nautical miles. This addition of 4,500 miles would entail an extra thirteen days or, say, a fortnight at sea for transports proceeding at fifteen knots. Such a loss of time on the route to India from our principal recruiting base if resulting from a surprise

attack at the opening of hostilities might indeed have very serious results, but we must not overestimate the general effect of the loss of the Canal route upon the re-inforcement of India. Let us for instance consider the effect of the extra fortnight at sea between Southampton and Bombay in a war lasting two years, that is to say one hundred and four weeks. It would reduce the number of troops from Britain available at any time in India by slightly less than one per cent., or less than one battalion in each Army of one hundred thousand men.

Re-inforcements from Canada if proceeding *via* England would be depleted to the same amount. The Japanese alliance however might conceivably bring the Pacific route from Vancouver *via* Singapore into use for Canadian troops, the distance to Calcutta from Vancouver by this route being less than that from Halifax to Bombay *via* the Cape. The direct route from Vancouver to Singapore is almost a coasting voyage, leading past Japan and along the shores of China. This important fact is readily appreciated by anyone who keeps a globe dismounted, as I have recommended, so that he can view it from any direction. If,

ERRATA.

On page 26, line 11, *read* "than two per cent. or less than two battalions."

on the contrary, we view the Pacific on a globe mounted so that we regard it from near the direction of the Equator, we see the almost uninterrupted coast line from Singapore to the Northern frontier of Chile as a semicircle, just as half the Equator appears a semicircle when viewed from the direction of a pole. But in actual fact the coast from Singapore to the frontier of Chile is straight except for minor sinuosities, in the same sense in which the Equator is straight, *i.e.* if followed from end to end it does not deviate either to right or left. In fact it is, apart from the minor sinuosities, the longest straight line of coast in the world.

The Cape route between Great Britain and Australasia is only one thousand miles longer than that by the Canal, and Cape Town is half-way between Southampton and Melbourne the distances being, from Southampton to Cape Town, 5,947 miles, and from Cape Town to Melbourne 5,814. From Halifax to Melbourne by the Cape is no longer than the route by the Canal, indeed if the latter include, as is usual, the call at Colombo the Cape route, 12,200 miles, is slightly shorter. The fact is that the

Mercator map of the world has, by its influence as a picture more or less familiar to us all from childhood, impressed on our minds a notion that Cape Colony occupies a position of remoteness in relation to other lands which is not in accordance with fact. This misconception is due to two circumstances, first that the Mercator map shows northern lands in enormous exaggeration, thus putting the apparent line of Central latitude of the habitable world much further from the Cape than it really is ; and, secondly, because the undue broadening out of the meridians in the south, exaggerates the apparent distance of the Cape from South America on the west and Australia on the east. The map of the world on Mollweide's projection helps to correct this impression.

Let us now examine the geographical conditions which assist the Navy to control communications upon the Cape route between the two halves of our Empire.

All the ports of South Africa are now British for a thousand miles from Cape Agulhas, both on the Atlantic side and on that of the Indian Ocean, and the whole salient of South Africa possesses advantages as a naval base which can

only be fully realised by taking account of a number of concurrent conditions, some of which are by no means obvious at first sight. Cape Town is not situated at a strait, as Gibraltar is, and it is possible therefore for hostile ships to go wide of it. If however their destination be India they cannot avoid the turning, and the position of the British Fleet based at the Pivot or Turning Point is central, enabling it to move on shorter lines, and the wider the berth which the hostile fleet gives to the Cape Position the greater the distance they have to traverse.

On the route to Australasia the Cape is not a pivot or turning point, the great circle course from Cape Verde, the western promontory of Africa, to Tasmania passing close to the Cape. The strategic advantage of the Position in respect to this track is due chiefly to the circumstance that it is situated where ports of call are much needed for the replenishment of ships upon this very long voyage. When in passing the Cape, the Atlantic is left and the Indian Ocean entered the ship has before her an empty sea with no island harbours. Southward of the Cape, moreover, the only coast is that of the Antarctic Continent, girdled with

ice and affording no harbourage. Thus, even if a hostile fleet succeeded in avoiding action off the Cape, it would be in a bad condition to challenge action at a more distant station.

HISTORICAL CONSIDERATIONS.

The geographical advantages which our Navy possesses for dominating the long tracks called the Cape Routes are however by no means confined to physical conditions. The other advantages can best be appreciated by examination of a map coloured politically.

The coat of many colours with which the world is represented as politically clothed has been woven, as all cloths are, with two sets of thread. The fixed threads laid down at the beginning, the warp, are the fixed physical features of the world's surface. Across and again across these, but ever advancing, human actions as a moving shuttle interweave the woof or moving thread, and, as time goes on the garment grows and the pattern appears. Once woven the pattern cannot be changed without damage. The significance of the pattern which we now see on the political map of the world is more readily understood if we glance

COLONIAL POSSESSIONS IN THE 17th CENTURY



over the historical maps which photograph successive stages, or, if we find it easier to learn from a story than from pictures, we can rest content with the map of the world as it is to-day and let the mind rehearse again the tale of maritime discovery and the overseas expansion of European races which began in the fifteenth century.

Numerous continental and insular positions flanking the Cape Route were occupied by Spain and Portugal in the days of their power, and now in the days of their weakness are either still occupied by them in the Old World or are in the hands of their Colonists in the New, who are equally without naval power. Our protective alliance with Portugal, is primarily due to the great importance to our naval communications of preserving her home and colonial territories from falling into the hands of any Great Power. It is one of the instances of that watch and ward which we have long kept over the integrity of several of the old maritime states whose continued occupation of important coast-line prevents the fleets of the Great Powers from establishing themselves in many a base whence they could threaten our naval communications.

Looking more closely at the particular question immediately under consideration, viz. the Cape Position and the Atlantic route from Great Britain to the Cape, we note in the first place that the Portuguese Colonies of Angola and Mozambique, both of which touch our South African possessions, now that "German South West" has been conquered, greatly prolong the salient where no hostile ship has the right even of temporary harbourage, the whole wedge being nearly an isosceles triangle the sides of which facing the two oceans have each a length, reckoned in a direct line, of more than two thousand miles.

On the outward route the Portuguese islands of Madeira and the Cape Verde are the supplement of our own possessions Ascension and St. Helena, and all four alike are landing stations of the British-owned cable to the Cape.

On the Western side the route to the Cape is flanked by the eastern salient of South America, formerly a Colony of Portugal, now the Republic of Brazil, which is only 1,500 nautical miles from the African coast.

Of the states whose colonial dominions grew up alongside our own France alone is still a

naval and military power. Her overseas possessions, flanking our route to the Cape at several points, diminished its security until the extension of the two empires and the course of history brought about harmony between the two states and ranged them side by side.

Thus we see that the long route to the Cape is hedged with difficulties for our enemies, that the needful replenishment of ships in South Africa cannot be obtained by them, and that the absence of available ports of call confers upon the nodal position of the Cape much of the character of an enforced point of passage which contributes so greatly to the strategic importance of a strait or defile.

As South Africa is important as an Imperial station so it is proportionally important that here should be that Political conception of patriotism which grafts Imperial loyalty (adherence to the whole State) upon racial traditions and local attachments. That this development of patriotism should have so soon become dominant in the Boer population is one of the most remarkable political phenomena of our time. The conquest of German South-West Africa by Union forces of British and

Dutch descent has made the back-land of the Cape Position a solid whole.

It was in 1884 that Germany occupied her recent possession. In the very next year the British Government declared a Protectorate in Bechuanaland which divided the German possession from the Boer Republics. And yet the uncritical pessimism which has become fashionable among us declares that our Government never does the right thing promptly. I well remember how, when I was in Germany in 1899 at the outbreak of the South African war, the people whom we now call Huns used to look at that red stripe on the map and lament that it prevented them extending a hand to our antagonists.

As the cutting of communication by annexation of British Bechuanaland is a lesson in Peace Strategy, so the operations in German South-West Africa afford an example of a less obvious kind in the effect of Communications upon War Strategy. It is a common maxim that, since concentration is the main principle of military action, campaigns should be defensive in minor theatres, since the defence can be maintained with smaller force than offence,

and more troops can therefore be concentrated against the enemy's main force. But in the case of the German Colonies, communication, being by sea, was wholly cut, and, there being no indigenous population loyal to Germany, they could be held when conquered with an insignificant garrison. Thus by employing a large force for a short time the whole of this force presently became available elsewhere. The case illustrates the way in which as a war lengthens so does the command of communications confer an ever increasing advantage.

THE INDIAN OCEAN AS A BRITISH LAKE.

THE STRAITS OF SINGAPORE are the great avenue of traffic between the Indian Ocean and the Far East, and of these Straits the British island of Singapore at the southern and eastern entrance is the key position. In this case as in that of the Cape the advantage of the present British position is most readily grasped by reference to the history of European Colonial Expansion. As the Portuguese were the Colonial pioneers on the route to India, so were the Dutch the pioneers of the routes beyond India to the further east, and occupied the large and numerous islands, now known as the Dutch East Indies, through and alongside which are the numerous narrow passages between the Indian Ocean and the China Seas. Holland being no longer a considerable naval or military power, her continued occupation of these islands greatly enhances the value of Singapore as a base for the British Navy.

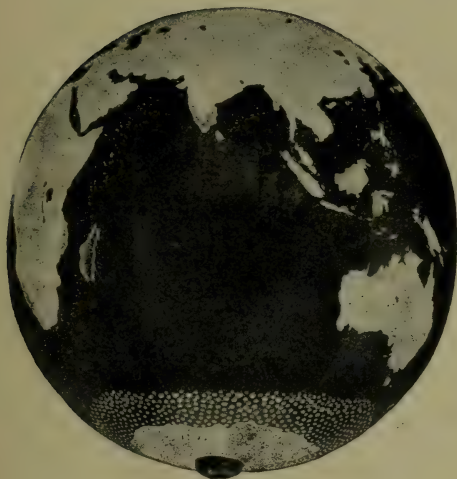
Our recent acquisition of the German portion of New Guinea has done away with the only holding of a great foreign power in any of the lands which lie on the Eastern entrances to the Indian Ocean.

The conditions of physical and political geography therefore make the Indian Ocean strategically almost a British Lake while (as under the present conditions) no Great Power possesses on its shores a good harbour to which naval and military stores and equipment can be conveyed by rail from its manufacturing districts.

The consideration of this contingency, which chiefly relates to the Persian Gulf, will be dealt with later.

We view with pride the splendour of the Indian Empire, but the mood is chastened when we think, as we often do, of the military responsibility entailed by its defence.

I suggest that the latter pre-occupation has unduly diverted our attention from the singular strategic advantages which the position and resources of India confer upon a Naval Power. How different might have been the history of India had its peoples been endowed with the



THE INDIAN OCEAN.

(Photograph of a globe).

genius of the sea ! How much the Greeks would have made of it ! And, if it be contended that the maritime genius of the Greeks was due to their peninsular and insular position, then let us say ; what an Empire the Arabs would have made and controlled from India !

Never until the British occupation has India been ruled by a maritime race. Before our time it was the terminal position of military conquest. In our hands it is a central position from which dominion has extended, military expeditions leaving its shores under the ægis of the navy for many destinations which could be reached more quickly from its ports, particularly Bombay, than from any other Base. It was a force sailing from Bombay that saved Natal in 1899. Burmah was approached from India by sea. It was from India that troops were hurried out to China at the time of Boxer troubles. The Persian war and the present Mesopotamian Expedition were conducted from India. Bombay was the base of Lord Napier's expedition to Abyssinia, and of the first attack on German East Africa, and Australia could be most quickly re-inforced from India.

The geometrical centrality of India with

Centred on Rosyth.



THE NORTH SEA IN RELATION TO ATLANTIC COMMUNICATIONS.

THE relation of the French Coasts to our Atlantic communications, upon which so much formerly depended, need not detain us when dealing with the Geographical relations of the British Empire and Germany.

The island of Great Britain, a breakwater 600 statute miles in length, restricts the sea passages between Germany and the ocean to the Straits of Dover between England and France, with a width of eighteen nautical miles; and the Norwegian-Scottish gap of 250 miles. The position of Great Britain athwart the lines of sea communication has greatly assisted the British Navy in its feat of preventing almost without exception the escape of even single raiders from the North Sea. The moderate area of this sea assists the work of the blockading Fleet, of which the advanced ships cruise close to the German ports.

The patrol of the shortest line between Scotland and Norway does not however suffice for commercial blockade as there is a long stretch of Norwegian coast to the north of it.

A Northern Patrol Line has therefore been established from the Orkneys by the Faroe Islands past the east of Iceland and as far as the Arctic pack-ice off the coast of Greenland.

Such are the geographical conditions under which our ocean traffic, including the assembly of our oversea contingents, is protected, and that of Germany, or destined for Germany, controlled. As the late Captain Mahan, U.S.N., has pointed out, the recent development of German shipping and of her export trade, by making her national life more dependent upon the ocean routes, has increased the strategic advantages which Great Britain enjoys from her position upon those routes.

Lastly, the narrowness of the Straits of Dover has assisted the Navy in securing the use of the ordinary Channel passages as the lines of military communication with our Armies in France.

IRELAND AS THE KEY OF OUR NAVAL COMMUNICATIONS.

GREAT BRITAIN, lying 300 miles west of the coast of Germany, restricts her communications with the ocean to a southern passage of eighteen miles and a northern gap of 250.

Ireland, lying west of Great Britain and much closer to her shores, might restrict yet more closely the communications of Great Britain with the ocean.

If the North Channel between Antrim and the Mull of Cantyre, in Argyll, a passage eleven miles wide, and the gap of 140 miles between Daunt Rock, near Queenstown, and Lands End were held by a hostile fleet ; Bristol, Cardiff, Liverpool, Glasgow and all other ports on the Bristol Channel and Irish Sea would be closed to oceanic and all other sea traffic. An extension of this blockade-line from the Lands End to Ushant, a further ninety miles, would prevent access to the oceans from all other


important English and Scottish ports except by a route leading round the north of Scotland. At first sight this circuitous route appears to be an open one but, as the trans-oceanic ports lie further south, the proper tracks to them lead somewhat close to the north and west coasts of Ireland.

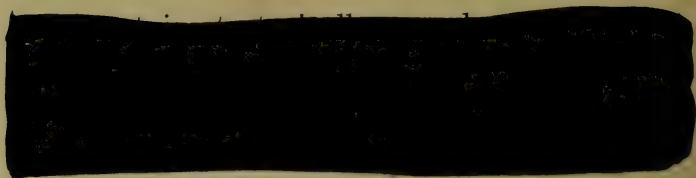
That island is well provided with first class naval harbours. The long deep-water inlets of its northern, western, and southern coasts afford excellent anchorage for large fleets. Lough Swilly, Co. Donegal, in the north and Bearhaven, Co. Cork, with its sheltering island, in the south, are much frequented by our own fleets. Indeed in this respect Ireland is better provided against Great Britain than Great Britain against Germany, for only in the northernmost portion of its Eastern coast has Great Britain any sea-lochs comparable to these.

Now let me emphasise as strongly as I am able the importance of the following argument. The main recruiting and technical base of the Empire, both for navy and army, is the island of Great Britain with its population of forty-one million, its coal and iron mines, large output of

steel, and great shipbuilding industry. The oversea Dominions have not sufficient White population nor adequate naval organisation to contend on equal terms with a Great Power, whilst for Great Britain the supply bases which must always be essential for raw material of munitions and are at present, and perhaps permanently, essential for food, lie across the ocean. Thus if the sea-routes be cut between Great Britain and the trans-oceanic Dominions the Empire is debarred from the pooling of resources in men and material which is the first condition of that concentration of force which is the basis of strategy.

To call Ireland the Key to the naval communications of the Empire is to employ a metaphor which is precise in its significance and not exaggerated in its suggestions, for a key closes gates against those who would enter and those who would leave, and the passages past Ireland are the gates between the principal habitation of the British race and its principal estates.





THE NAVAL CENTRE OF THE BRITISH EMPIRE.

THE ship, widely as she may rove, is no mere nomad, for she has a home, and the homes of ships are part of geography.

At most times in history there has been a chief home of shipping, the ports of some maritime state which has for the time secured the profitable business of common carrier for all nations on the great untaxed highway of the world.

Those who have the carrying business are known as middlemen because they act as intermediaries between producer and consumer, but, if we look at the positions successively occupied by great maritime States at different periods, we shall see that they were middlemen also in the geographical sense, their home ports lying near the centre of human activity, and on routes connecting countries which are not only far distant from one another but differ greatly in character and products.

The shifting of the centre of maritime activity, and of the naval power which has generally been its accompaniment, has not been an oscillation or a confused wandering, but on the contrary a definite and continuous progression, which we can trace for three thousand years, moving from south-east to north-west as the White Race progressively peopled and developed Europe and America. At length the centre of maritime activity and naval power has settled in Britain which, although near the geometrical centre of the land hemisphere, has in an almost equal degree the advantage of centrality in respect of maritime routes to the world's ports.

Situated in a region of great population it also occupies a middle position between the great populations of China and India on the East and the great area and activities of America on the West. Here I pause for a moment only to warn the reader against the fallacy of the statement which places the United States "in the middle," *i.e.* between Europe and Asia. As the world is round and its surface re-entrant it is as easy to confuse the facts as it is to spin a globe around its axis, but the essential fact

is, that, as the Pacific Ocean occupies nearly half the width of the world, Asia is as near to America *via* Europe as *via* the Pacific.

Although, however, it is easy to show that Britain has a position of greater centrality in the world than the United States, we must not lose sight of the fact that, geometrically, Germany is as central as Britain. By sea she is somewhat less central, by land routes more central. Let me at this point explain the practical purpose of introducing these matters here.

I want to show how a certain group of geographical conditions, and a certain series of historical events related to them, have contributed to, and accompanied, the growth of naval power in Britain to a point where the maintenance of this power has become the prime fact in our national policy and its overthrow the prime object of German policy.

The vast populations of India and China were established in their respective lands before the dawn of Western history. Beyond them the broad Pacific made an end to the world. Their foreign commerce flowed westward across Asia Minor, Syria and Egypt. A great part of its subsequent distribution was effected from the

Levantine ports of the Phœnicians to the growing nations of the Mediterranean shores. It is easy to recognise the geographical analogy between mediæval Venice and ancient Tyre, when we recall the later development of the lands of north-western Europe which had shifted the central position of sea-commerce further north and west. That development however did not stop at the continental coasts of the Baltic and the North Sea but extended to Scandinavia and Britain.

The fertilising stream of Asiatic commerce flowed from Venice through Germany, and was re-distributed to Britain and Scandinavia from the continental ports of the North Sea and Baltic, whose shipping was controlled by a great German Combine, the Hanseatic League, which thus shared with Venice (as well as with Genoa) the position of principal sea carriers.

Then the Portuguese made their way round the Cape to India and the spices and other commodities of the Indies found their way by the untaxed sea route straight to Lisbon.* That capital however is not well placed for

* See G. Chisholm—"Geography and Commerce"—*Geographical Journal*, vol. xxx (1907), p. 313.

distribution by land routes through Europe, and the Dutch, seizing their opportunity, secured the Lisbon trade and re-distributed the goods from the ports of the Rhine delta. Thus the stream of commerce which had enriched Germany was tapped at both ends. The Dutch, developing their shipping, soon became the chief marine carriers of the world at a time when the proportion of commerce borne by sea began to increase. England, placed by the discovery of America in a central instead of a terminal position, became for the first time an essentially maritime state, and with the Union of the Crowns, Scotland likewise. In these days there was no sharp differentiation between mercantile and fighting marine, and it would be practically correct to estimate the relative naval power of States by the size and efficiency of their mercantile marine. After a long and close competition in maritime discovery, commerce and warfare, the United Kingdom at length replaced Holland as the home of the great carrying fleets of the world, and this position she has ever since maintained by commercial, industrial, and colonising activity, and by the gradual evolution of a Naval Service which is

now one of the most powerful and efficient instruments of war that the world has ever seen, and, both absolutely and relatively to the times, the greatest concentration of armed force there has ever been upon the sea.*

Thus the ocean routes which lead to the shores of Britain are crowded with British ships carrying both our own goods and those of other nations, our yards turn out more ships than are built in any other country, and our naval ports are the bases of a supreme navy. This concentration of traffic, tonnage, and armed force in the ports of Britain is a present geographical fact arising from human actions operating under certain conditions of physical geography.

Although not a fixed geographical fact in the same sense that a mountain is, yet it would now require the operation of great forces to transfer

* As an organism the British Navy is in one important respect more efficient than Man, for it transmits acquired characters. The results of our unpreparedness to wage a land war of millions has led to all sorts of disparaging generalisations amongst ourselves as to supposed deficiencies of our race in the organising and intellectual part of War. That the observed deficiencies are not due in a single respect to absence of racial aptitude is shown by the fact that not one of them has appeared in the Senior Service; we have only to "bend our mind on it," in the Duke of Wellington's phrase, to be second to none in every aspect of war.

the naval centre of the world from Britain to another state.

The shipping tonnage owned in the British Empire is $21\frac{1}{4}$ millions, which is 43 per cent. of the tonnage of the world, and of this, $19\frac{1}{2}$ million tons is owned in the British Isles.

The tonnage owned in Germany is $4\frac{3}{4}$ million.

TECHNICAL BASES AND STATIONS OF THE FLEET IN THE BRITISH ISLES.

THE iron ore of Great Britain, and the coal with which it is smelted, lie between the line which connects Bristol with Hull, and the nearly parallel line where the Scottish Highlands begin. The area between these lines, part in England, part in Wales and part in Scotland, known as Industrial Britain, is ultimately the Technical Base for the British Navy, and for the main army of the British Empire. The naval and military power which a State can put forward depends upon its output of iron more than on any other single factor except that of the number, quality and unanimity of its recruitable population. The output of coal for fuel, in addition to that required for smelting the iron, is also an important factor in naval equipment. The figures for the United Kingdom and Germany for the year 1911 expressed in millions of tons, were respectively—

United Kingdom. Germany.

Iron and Steel ..	16	30
Coal ..	272	158

As the Technical Bases, whether building yards for warships or munition factories, must be defended, it seems to be best that they should not be spread about unnecessarily but, on the contrary, kept as close together as industrial conditions allow, so that they will absorb a smaller force for their defence. The mines and the coast line are the two immovable conditions, and it therefore appears to me that the ideal to aim at is to keep our naval and military munition works within the mine area,—Industrial Britain,—and our naval ship-yards in ports within or near that area. The chances of a systematic invasion accompanied by a somewhat prolonged occupation of a considerable part of Great Britain has however been reckoned so slight, that no such grouping of our Technical Bases has been adopted. In the matter of Naval Yards particularly the system which has grown up is the very reverse. Our principal rival in naval matters having been until recently, France, our principal naval yards have been placed in the south, at Chatham, Portsmouth, Devonport and Pembroke.

The principal military stations being in the south and east of England, both for the purpose of defence and for convenience of embarkation, the chief manufacturing arsenal has been placed at Woolwich, and other factories of importance, such as that of small arms at Enfield, have been established in the south-east of England within the area dominated by London, where almost all the lines of railway converge upon that great junction. Thus the Technical Bases of the Navy and Army are pretty uniformly divided between Industrial Britain and the region which, following Mr. Mackinder, I will call "Metropolitan England." This arrangement is far from ideal. The south and east coasts of England are the parts of the Island most exposed to attack from the Continent; the south-east, of which London is the one great nodal point of traffic routes, is the fighting front, and it would be better that repairs should be done and supplies come from behind this salient where the armies of defence would be active. Moreover London is an embarrassment, because the bringing up of food supplies for the non-combatant population, which includes millions of women and children

and is too vast to be moved, must in all circumstances absorb a large part of the rolling stock of the railways. It is therefore the more undesirable that the railways should be further taxed for the conveyance of raw materials such as coal and iron for the use of south-eastern arsenals. The transport of these heavy materials might lead to a congestion of the railways, which would prevent that concentration of troops at the right time in the desired place which is the first essential of successful strategy.

As things are however the London area is both Vulnerable Point and Technical Base, an undesirable combination.

The situation of Naval building-yards demands a few words. Accessibility of labour and material seems at first to suggest that warships should be built alongside the ships of commerce, but in war-time serious drawbacks to the arrangement become apparent. Secrecy is only second to total magnitude as a factor in assembling the larger force at the time and place where the blow is to be struck, and the secrecy of naval preparations cannot be maintained in a commercial port. Thus the ideal situation for naval yards is separate but not

remote from the commercial yards, a combination of which Rosyth is an example.

The practice of measuring naval resources by the capacity of a country's building yards is sufficiently correct when estimating the rate at which the State can prepare for naval war, but the building yards are not the ruling factor of that re-preparation which has to follow every considerable fleet action. The rate at which this process can be effected depends not on the number of slips, on which ships are built above the level of the sea, but on the number of dry docks, fixed or floating, the bottom of which is below the surface of the sea, into which a damaged ship can float, from which the water can be allowed to flow, so that the lower parts of the vessel can be repaired, and from which, after re-admitting the water, the vessel can return to her element. The proportion of ships under repair to those in course of construction is enormously greater during war than in time of peace.

The great strategic principle of concentration of force demands not only that the first blow should be heavy but that it should be followed quickly by others like unto it, and this in the

case of the Fleet depends very largely on the dry docks, the situation of which is therefore an important part of naval geography.

Geographical conditions, *i.e.* the effects of topography, are on the whole adverse to strategy, for two reasons, first because they are fixed, whereas strategy primarily aims at movement, and secondly because they are known, and strategy aims at secrecy. In both respects the advantage to a navy of floating dry docks is apparent.

THE RELATION OF BRITISH TO GERMAN NORTH SEA BASES.

THE German North Sea coasts face east and north, making a re-entrant at the mouth of the Elbe, but the fortified island of Heligoland lying twenty-five miles off the coast straightens out the defensive line, which runs with but a slight inward curve for a length of 110 nautical miles reckoned from the lighthouse on the northern point of the island of Sylt, off Schleswig to that at the eastern extremity of Borkum, lying off the mouth of the Ems. Both the coast and the off-lying islands are strongly fortified, as is necessary since the army is the ultimate defence of the weaker fleet. Behind this position the Kiel canal gives the German Fleet a private entrance to the Baltic, from which sea the whole or part of their force can emerge either by the same route or by the northern passage, through the strait of Skager Rack, a passage sixty miles wide between Denmark and Norway.

Heligoland lies in the centre of the main position, and distances reckoned from that point express conveniently and with little error the distance of the whole of the German North Sea Position.

In marked contrast to the concentration of the German North Sea bases is the wide scattering of the naval bases on the East and South coasts of Britain. Were the conditions of movement of fleets similar to those of armies, such an apparent diffusion of force would be alarming, but, though the methods of military and naval strategy can be expressed in a similar formula their relation to geographical conditions differs widely. In naval warfare reconnoitring is easier, signalling more effective, the assembling of force proceeds at a rate about thirty times as great, and the effective junction of squadrons, being an instantaneous affair, need not take place far from the enemy as in the case of the corps of an army.

The British Fleet in home waters, in addition to patrolling the northern line of commercial blockade, has to block the Scandinavian Gap and the Straits of Dover against surface ships, to guard the passages of the English Channel

against submarines, to clear from mines the approaches to our ports, and to afford protection from bombardment or landing raids to many hundred miles of coast. For the performance of these duties the convenience is evident of stations at Portsmouth, Dover, Sheerness (Chatham), Harwich, Grimsby, Rosyth, Cromarty and the Orkneys, but the point that I have to make clear is how such scattering is consistent with that duty of the Fleet, which is probably of more importance than all the others put together, viz. that of cutting off the German Fleet from its bases when it puts to sea and bringing it to a decisive action. In reference to this prime function of the Fleet it is not so much the distance of our Stations from one another that we have to examine as their respective distance from a position near the German Base where the hostile Fleet could be intercepted. The position of the Base may be taken without appreciable error as that of Heligoland, the precise distances from which island are given in the Admiralty tables.* These tables show precisely, as the appearance of the map does in a general way, that it would

* *Distance Tables*, vol. I, second edition, 1915.

be difficult to discover any point at an equal distance from our shore which would be better placed than Heligoland for the almost simultaneous concentration of ships based on our east and south coast stations.

DISTANCES FROM HELIGOLAND (*in nautical miles*).

Portland	466
Portsmouth	413
Dover	308
Sheerness	313
Harwich	280
Grimsby	287
Tyne (entrance) . .	328
Rosyth	408
Cromarty	461
Scapa	469

If the east coast of Britain be divided in three, one part would lie north of Rosyth and two parts south of that naval base. Therefore if we regarded the chief function of the Fleet as the conduct of a patrol up and down the East coast we should be driven to the conclusion that the superiority of accommodation and greater privacy offered by the Firth of Forth had compelled the Admiralty to forego the advantages of centrality offered by the Tyne; but the line of the East coast is only one of those which has to be reckoned in determining cen-

trality in the North Sea, and for the country with the larger fleet, it is not the most important line. The others are the line of the Northern Patrol from the Orkneys past the Faroes and the east of Iceland to the Greenland ice, the Scandinavian Gap, the Entrance to the Skager Rack, the Heligoland position (from Sylt to Borkum), the mouths of the Rhine and Scheldt, and the Straits of Dover. The following figures taken from the Admiralty Tables show that Rosyth is not ill placed with reference to these lines.

DISTANCES FROM ROSYTH.

To Ekersund	.	344	(coast of Norway).
„ The Naze	.	366	(coast of Norway near entrance to Skager Rack).
„ Esbjerg	.	408	(Danish coast near German frontier).
„ Heligoland	.	408	
„ Emden	.	411	(German coast near Dutch frontier).
„ Hook of Holland		375	(Rhine mouths).
„ Flushing	.	415	(Entrance of Scheldt).
„ Ostend	.	398	
„ Dover	.	398	

In point of short and sheltered access to other shipbuilding and repairing yards the Firth of Forth is not particularly well placed, but the

deficiency would disappear if a ship-canal were constructed connecting the Forth with the shipyards of the Clyde. This would incidentally provide also a sheltered route from Belfast and Barrow.

PART II.

THE ISLAND OF GREAT BRITAIN AS THE CITADEL* OF THE EMPIRE.

AN indiscriminate reckoning gives to the population of the British Empire the imposing figure of four hundred and thirty million, but of these only sixty million are of European stock. In the present stage of our political development and military organisation it may be computed with approximate accuracy that Coloured races in the detached dominions of European States neither add to nor subtract from the net recruiting numbers of the White population, the number of the White garrison being roughly equal to that of the Coloured contingents of the expeditionary forces.

Thus in comparing the net recruiting strength of the British and German Empires we must for the purposes of the day, compare not the total population but that of the Whites.

* "A fortress intended as a final point of defense."
(Webster's Dictionary).

The figures which I give are in all cases taken from the last decennial census which is the most convenient method, and for the purpose of comparing relative strength the figures are sufficiently recent. They give the proportion of sixty million White British to sixty-five million Germans.

Two thirds of our sixty million are concentrated in the one island of Great Britain, the distribution in the detached White Recruiting Bases being :

Great Britain	41 million.
Ireland $4\frac{1}{2}$	} 19 million.
Canada $7\frac{1}{4}$	
Australia $4\frac{1}{2}$	
New Zealand 1	
South Africa $1\frac{1}{4}$	
Other possessions, about $\frac{1}{2}$	
<hr/>	
Total British Empire	60 million.

The English, Welsh and Scotch, whilst each regarding one part of Great Britain as peculiarly their own, have so strong a feeling of the unity of the island that the landing of a foreign army in any part of it would be regarded by all as an Invasion.

Further, the conception of patriotism amongst all three has, since the eighteenth century, been

elevated as well as enlarged until the Dominions both White and Coloured are now regarded not as a possession but as a part of the State. Thus in Great Britain we have the combination of conditions which create the Main Recruiting Base of an Empire, *i.e.* the largest population in a continuous territory which possesses the imperial form of patriotism, that, *viz.* which identifies the virtue with loyalty to the whole State: *civis Romanus sum*. That the island of Great Britain is one Recruiting Base, but that the British Isles, or United Kingdom of Great Britain and Ireland is not, has now been emphatically recognised by the National Service Act which makes military service compulsory in Great Britain but leaves it voluntary in Ireland.

Reckoning on the basis of population alone, Britain can find for the Army two men for every one provided by the White Dominions and Ireland, and the preponderance of her contribution to the Naval Power of the Empire is much greater.

When examining geographical statistics in relation to war it is important to note not only the present population of countries but the

rate at which they are changing. Decennial increase of population, that between two takings of the census, is important both directly for calculating the increase of recruiting capacity, and indirectly as an index of the rate of growth and development of the resources of a State and of each country within a State. This figure is the net outcome of five others of prime importance, viz. the total population, the birth rate, death rate, the emigration and immigration. In France the decennial increase is low because the birth rate is low. In Ireland, with a high birth rate, it is low because emigration is large. In the United States it is high because the population is large and the immigration large. In Russia it is very large in spite of a very high death rate because the population is large and the birth rate very high. In Germany the decennial increase is high ($8\frac{1}{2}$ million) because the population is large and the emigration has of late been kept very low by the development of the industries of the country.

In Great Britain the last decennial increase is a considerable figure, greater than was reached in any previous decade, viz. 3,400,000.

The last decennial increase of the White

Dominions and Ireland I make out to be 2,900,000, making for the whole Empire an increase of the White population between 1901 and 1911 of $6\frac{1}{4}$ million. Thus the island of Great Britain not only has at present a White population greater by twenty-two million than that of all the rest of the Empire, but that excess is still increasing. The decennial increase of the Dominions is largely due to immigration from Great Britain, and so far as this is the case, the result, while making the military preponderance of Great Britain within the Empire less marked than it would otherwise be, does not diminish the rate of growth of the recruiting and other resources of the Empire. It is otherwise with the large number of emigrants from Great Britain to the United States, whose descendants, at least, are lost to our armies. The decennial increase of the Empire's population would be appreciably greater if this stream were deflected to the Dominions.

The sustained invasion of Britain on a grand scale is known to be a favourite plan of military experts on the Continent of Europe. It was Napoleon's ambition. It is now the ambition of a whole nation. That the project is also a

definite scheme of the German General Staff is beyond dispute.

These things being so, it is singular how few people in this country seem to have concerned themselves, at all events before 1914, with the details of a great campaign on our own soil. It has been relegated to the region of remote possibilities by the common acceptance of the following doctrine, viz. that before the British Navy is defeated an invasion could not be maintained, and afterwards it need not be undertaken.

I think I can show ground for regarding this antithesis as misleading; and if it be misleading it is extremely dangerous, for the matter is vital both to Britain and the British Empire. The fallacy is the assumption that in the event of naval reverse we should suddenly pass from the condition of the Power with the supreme navy to that of one with no navy worth reckoning.

In actual probability the result of defeat in a general naval action would be to put us in a category not contemplated in the above argument, viz. that now occupied by States such as Germany, France and Japan relatively

to ourselves. We should be the State with the smaller, but still formidable, navy, which would retire when necessary on its fortified ports, relying for ultimate protection on the land forces, as every navy but our own already does. Now two outstanding lessons of the present war are (1) that the weaker navy has been unable to prevent the transport of troops by sea and (2) that the stronger navy has been unable to destroy the weaker in its ports.

The great number of ships required for enforcing commercial blockade has also been illustrated, and, since it requires the holding of much longer lines to blockade the British Isles than Germany, it is a fair inference that while possessing a navy still formidable although weakened we could not be completely blockaded by a fleet which, though made superior to ours by its victory, would be diminished thereby in its absolute numbers, and which would have to satisfy great demands in the way of guarding transport and supply ships.

Thus after a general action unfavourable to our navy the dispatch of an expeditionary force to our shores would not be superfluous, for we could not only subsist but build more ships.

Neither would it be impossible to maintain the invasion, for in the present war expeditionary forces have been reinforced and supplied by sea with very little loss, in face of the German and Austrian navies, and over lines of passage, *e.g.* to Gallipoli, as long as a trans-Atlantic crossing and much more hazardous.

I shall recur to the subject of the invasion of Britain when I have treated of the German bases, and the lines of operation by which Britain would be approached from them.

COLOGNE AND ESSEN.

THE main Technical Base of the German Army is the industrial region of which Cologne is the metropolis and Essen the chief arsenal. It lies partly in Westphalia on the right bank of the Rhine, partly in Rhenish Prussia on the left. Most of the armour plate and guns for the fleet are also produced here, the ship-building yards and naval stations from Emden to Kiel having neither coal nor iron in their immediate vicinity. A very large proportion of the technical supplies of both army and navy come from a small area in the valley of the Ruhr, a tributary which enters the Rhine from the East at Duisberg. This district, known as the Ruhr coalfield, has a length of fifty miles from east to west and a width of twenty from north to south. Its population is 3,000,000 and it includes twelve manufacturing towns of over 100,000 inhabitants,* one of which is Essen

* See "The Continent of Europe," by Professor L. W. Lyde, pp. 229 and 323.

with a population of 300,000, the greatest manufacturing arsenal in the world. Twenty miles south of this area lies Cologne, with a population of 520,000. Cut off from the 1000 square miles of the Ruhr coalfield I apprehend that the German army would be quickly paralysed, and the navy soon crippled.* Let it not be supposed, however, that such concentration of resources is otherwise than favourable to military efficiency.

No doubt the proverb about having all the eggs in one basket occurs to the mind, but it is not applicable, the warning being directed against *carrying* them in this way. Its proper application is therefore not to bases but to lines of supply, of which there should be a choice. Technical bases on the contrary should be concentrated, because they must be covered by the army, and the more concentrated they are the less tax their protection imposes on the army. The only exception to this rule would be in the case of a country where strikes are feared, and where accordingly it may be thought

* Most of the iron used in this manufacturing district comes from German Lorraine, which we hope soon to see French once more. Here are produced 21 out of the 28 million tons of iron ore raised in German territory.

well to distribute arsenals in different industrial districts so as to diminish the risk of general or simultaneous strikes.

I will refer to this great manufacturing and mining district of Germany, including that of the Lorraine iron mines as the Cologne Position.

Cologne has always been a great focus of German life. Its relations, however, extend beyond the national boundaries which lie so near it on the West. Let us think of it in relation to London and in relation to war with the State of which London is the Capital. The journey from London to Cologne is often made, and there is a variety of routes. Let me recall the experience. By train to the coast, and then a sea-crossing. We land on a foreign shore and feel the magnitude of the change and the formidable nature of the gap between the shores. Then we take our place in an international train, which runs through to Cologne in a few hours, and the more closely we have studied the map of Europe the more we feel that it has played us false, for its areas are unrecognisable and its divisions unseen. We glide from one country to another, as in crossing England we pass unconsciously from one county to another. Not

only are divisions unnoticeable, but they are overstepped, adjacent countries being linked up by the continuity of mineral resources and of avenues of communication.

Thus if we have crossed from Dover to Calais we enter near Lille, a "black country" of coal and iron mines extending continuously along our route through Belgium *via* Namur and Liège, into Germany in the vicinity of Aachen, or Aix-la-Chapelle, with an obvious, and indeed obtrusive, continuity of industrial life. If, crossing from Harwich to the Hook of Holland, we take what used to be the favourite conveyance of English tourists, the steamer up the Rhine, we find no sudden change in the river, no shallows or falls, to divide it into reaches, but a splendid waterway throughout, which makes Cologne an ocean port, as London is.

And there are even more direct routes between London and Cologne, that from the Thames to the mouth of the Scheldt at Flushing, and that from Dover to Ostend and through Belgium *via* Ghent and Liège. This last is the shortest, so that when the German army broke into Belgium at Liège and flooded the Belgian

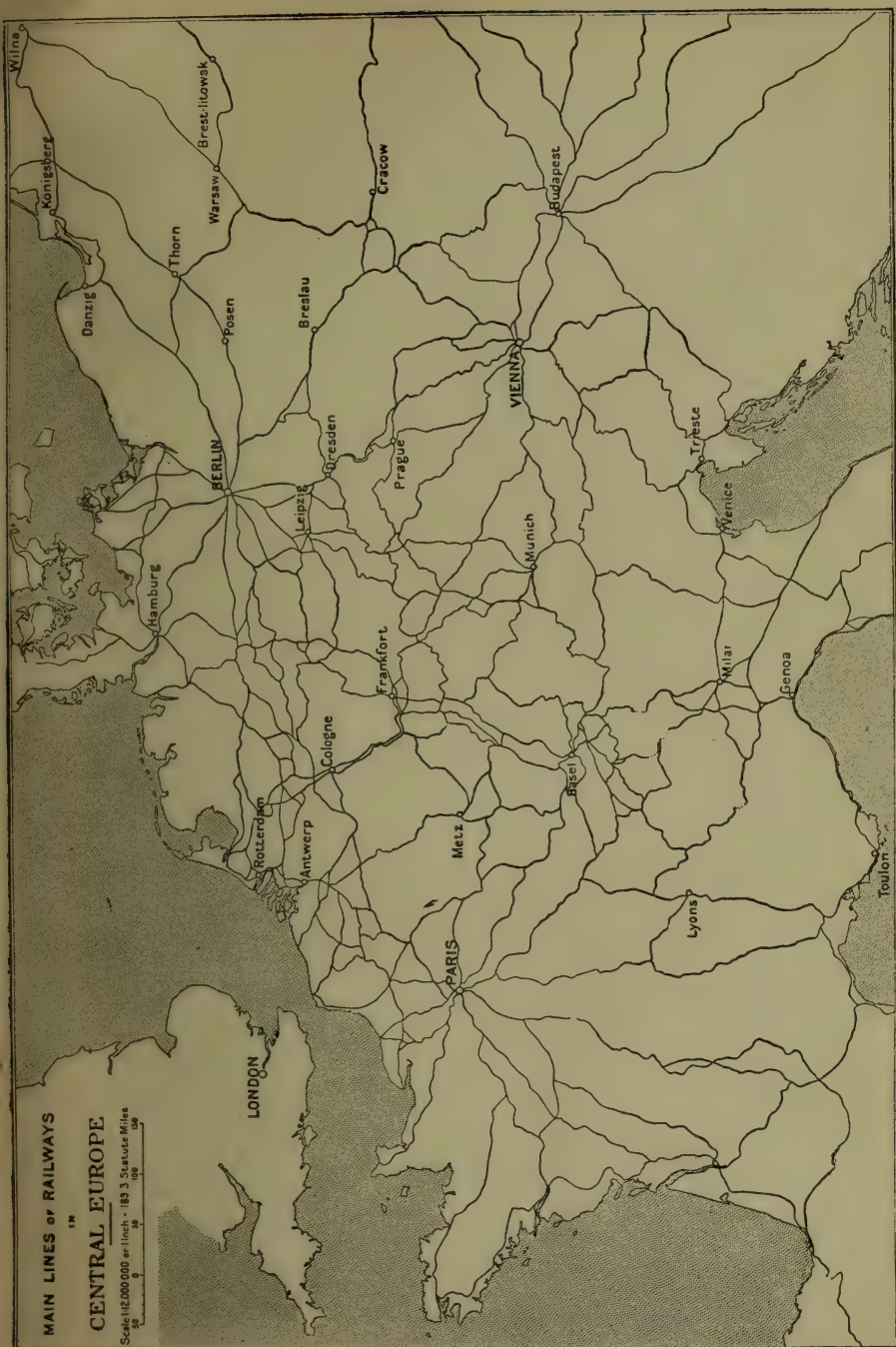
MAIN LINES OF RAILWAYS

188

CENTRAL EUROPE

Scale 1:12,000,000 or 1 inch = 185.3 Statute Miles

0 100 200 300 400 500



plain *en route* for Paris its line of operation was also along the shortest road to London. And what of the distance and the times? To say that the distance of Cologne from London is less than that of Edinburgh is not, perhaps, illuminating because there is, in the latter case, no water break, but it is worth pointing out that the distance between London and Cologne is only a few miles greater than that between London and Dublin *via* Holyhead. The following are the times and distances between London and Cologne as given in the "A B C routes" at the commencement of Bradshaw's Continental Railway Guide.

LONDON TO COLOGNE.

Routes via Belgium.

Distance. Time.
Miles. Hours.

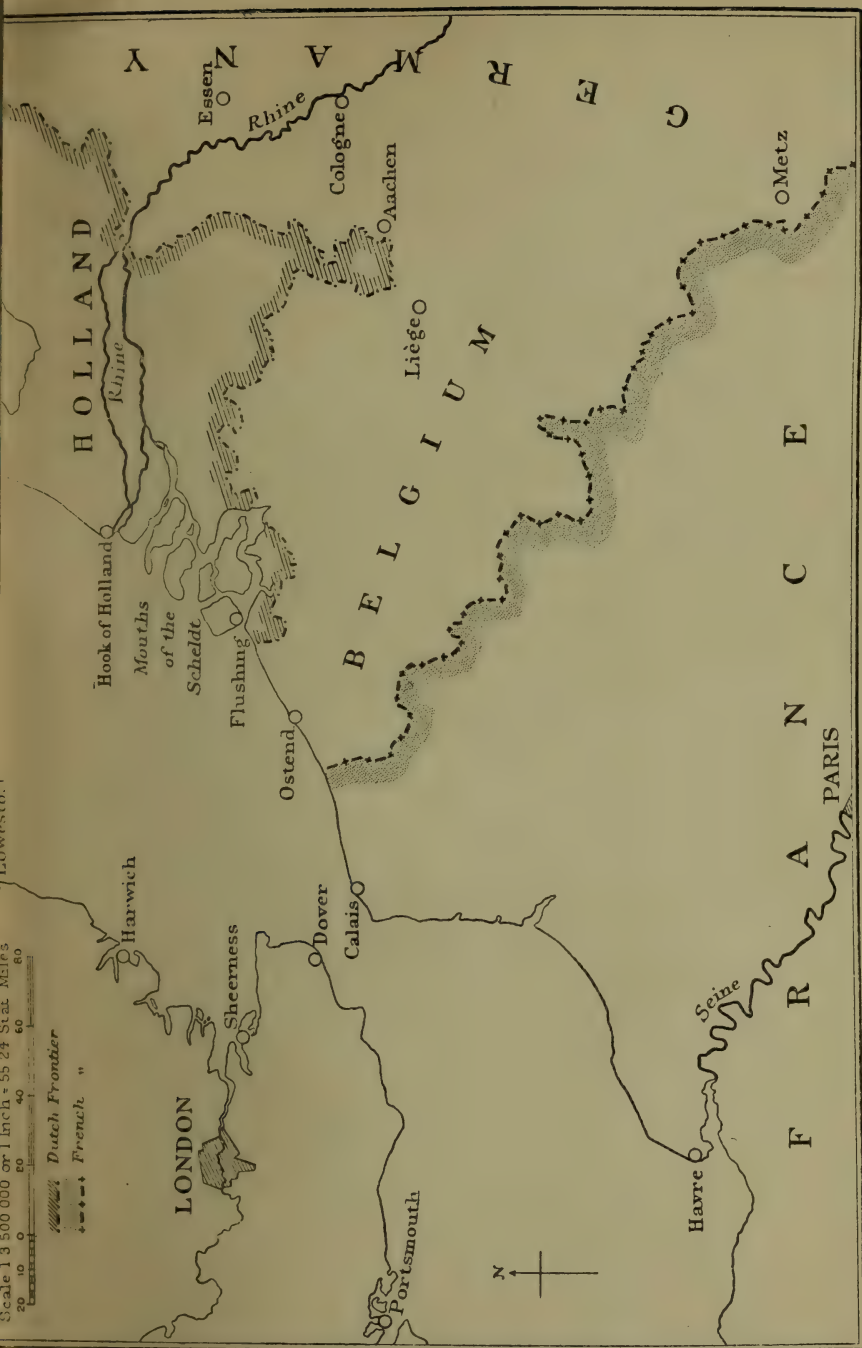
<i>Via</i> Dover, Ostend, Bruges, Ghent, Malines, Louvain, Liège, Herbesthal and Aix-la- Chapelle	357½	11¾
Or <i>via</i> Brussels	362	12¾

Routes via France and Belgium.

<i>Via</i> Dover, Calais, Lille, Brussels, Liège, Aix-la-Chapelle	382½	13
Or <i>via</i> Dover, Calais, Lille, Valenciennes, Aulnoye, Erquelines, Namur, Liège, Aix-la-Chapelle	393	13

	<i>Routes via Holland.</i>	<i>Distance. Time.</i>	
		Miles.	Hours.
<i>Via</i>	Queenboro, Flushing, Rosendale, Breda, Boxtel, Goch, Wesel, along right bank of German Rhine, and Oberhausen	360½	12½
Or <i>via</i>	Harwich, Hoek van Holland, Rot- terdam, Geldermalsen, Nymegen, Kleve (along left bank of German Rhine), Kempen and Neuss	375	13¾

So many, and so excellent are the routes by which the capital of the British Empire can be reached from the main military base of Germany between sunrise and sunset of a summer's day. Or, looking at it from the other point of view, so short is the course from London to that district of Germany in which the immobile parts of her military strength are chiefly situate.



HOLLAND, BELGIUM AND THE "CALAIS CORNER" OF FRANCE.

THE country between the Cologne district and England is of the highest strategic importance in the relations of the British Empire and Germany. Its present political condition is, as everyone knows, largely due to our historic policy, going back at least to the days of Queen Elizabeth, of preventing the Low Countries from falling under the domination of any great military power.

The best way to begin the strategic study of this region is to examine the size and shape of the two channels which lead to the Straits of Dover. One of these is familiar under the name of the English Channel, the other is not so generally recognised as being a channel because it is usually included in the scope of the term "North Sea." I have ventured to call it the Dutch Channel.* It has almost exactly the

* See Geographical Journal, May, 1915. "Notes on the Historical and Physical Geography of the Theatres of War," by Vaughan Cornish.

same size and shape as the eastern half of the English Channel.

The continental coast from Ymuiden to Calais is at the same distance from the coast of Suffolk, Essex and North Kent, as the coast of France between Calais and Havre is from South Kent, Sussex and Hampshire.

Moreover the mouth of the Rhine is the same distance from the coast of Essex as the mouth of the Seine is from that of Hampshire, and the ports at the English end of the two passages are respectively at nearly equal distances from London.

The actual figures are :

Hook of Holland to Harwich . . .	106 nautical miles.
Harwich to London by rail . . .	71 statute miles.
Havre to Portsmouth . . .	92 nautical miles.
Portsmouth to London by rail . . .	73 statute miles.
Havre to Southampton . . .	114 nautical miles.
Southampton to London by rail . . .	78 statute miles.

The well known story of our long wars and former rivalry with France makes us all realise the menace of an army of invasion gathered on the continental shore of the eastern half of the English Channel, but armies of the same strength gathered on the continental shores of the Dutch Channel would be a more formidable

menace, for they would have naval bases infinitely better than the French ports.

A straight line drawn from Calais to Ymuiden (the deep-water entrance to Amsterdam) passes across the sea as the chord of the arc made by the incurving coast. Its length is almost exactly the same as that of the chord drawn from the Danish to the Dutch frontier of Germany, that chord which, passing close to Heligoland, defines the front of the present naval Position of Germany on the North Sea. Between the two naval positions of which the centres are respectively the mouths of the Elbe and Weser and the common mouths of the Rhine and Scheldt, the rectangular salient of the Dutch coast intervenes, the corner of which is marked by the Light on Terschelling Bank, a little south of which the Dutch Channel begins. In respect of harbourage both the North Sea naval Position and the Low Countries naval Position are excellent, but as a base from which to invade Britain that of the Low Countries has an immense advantage, because the average distance from our shore is only about 100 instead of 300 nautical miles. In this respect, as always, I deal with the problem

of invasion on the supposition of the relative strength of our navy and that of Germany being reversed, a condition which might occur either through a defeat in action or through a hostile combination requiring the absence of part of our fleet. Under these conditions the most important factors would be the ability of the Germans to fling a huge force suddenly upon our coasts and to maintain uninterruptedly an adequate stream of supplies and reinforcements. The success of both operations depends greatly upon invisibility, an advantage which from a distance of 300 miles can only be fully realised during fog, an uncertain and dangerous ally, whereas a crossing of 100 miles can be made in the darkness of the night during the greater part of the year. Probably however, the North Sea bases would also be used, for the whole operation would be on a very large scale.

The problems which used to be worked out for invasion by a force of 70,000 men, landing, say near Maldon in Essex, are only useful now if regarded as parts of a co-ordinated offensive by a number of armies of that size. Neither must the problem of an invasion of Kent be considered apart from that of invasion of

Essex, since, if the enemy had sufficient naval superiority to maintain his communications, he might be able to make the Thames estuary the axis of his advance on London.

An advance from the Humber upon the manufacturing districts of Yorkshire and Lancashire has been regarded by some people as a more likely plan and a more formidable menace than an advance upon London. If however the mouths of the Rhine and Scheldt came into possession of the Germans, the coast of Essex would offer enhanced inducements at all events for the beginning of invasion. The trunk lines of railway connecting London with the North and West lie close together a few miles from the Essex border, and a wedge driven in here would make it difficult, if not impossible, to maintain the enormous traffic required both for feeding London and preserving unity of military action between Industrial Britain and South Eastern, or Metropolitan, England.

In this connection it is interesting to note that from the head of the Severn Estuary near Severn Bridge to the Wash near Spalding is to be found an excellent line for the entrenched

defence of a Continental army desiring to hold Metropolitan England pending preparations for a further advance. The whole distance is only 130 statute miles and both the slope of the ground and the direction of the rivers facilitate defence against attack from the north-west.

The "Calais Corner," as I shall call the salient of the French coast opposite to Dover, which extends to the mouth of the Somme, is important to the Germans not merely to facilitate a crossing by their troops but also for the opportunity of blocking the line of naval communication between the English Channel and the North Sea. The increasing range of guns, efficiency of air craft, development of submarines and mines, and, generally, the improvement of weapons of war will make it increasingly difficult to keep the Straits open for ships of war in face of an enemy established at Boulogne and Calais and on the high land between these ports. The blocking of the Straits would mean that our ships could only pass from the English Channel to the North Sea by steaming round the north of Scotland. Thus in the patrolling of the coast, instead of the maximum distance to be traversed being the semi-circumference it

would be the whole circuit of the island, which would be almost as if our navy were to find our coast line to have been suddenly doubled in length.

The fact that the French coast makes an almost rectangular salient between Calais and Boulogne, trending south from thence to the mouth of the Somme, has this important consequence in relation to German geography, viz. that to hold north-eastern France (including the Lille coal field) up to that point would not make the length of land frontier any greater than that involved by holding Belgium.

In order that Germany should obtain control of the three districts Holland, Belgium, and the Calais corner of France (mostly comprised in the departments Nord and Pas de Calais) it is evident that her line of operation should be, as it was in fact, through Belgium, and this for two reasons. First, because the occupation of Belgium severs land communication between Holland and the French and British armies in Northern France, and secondly because the roads and railways of the Belgian plain are the routes by which the Calais Corner must be reached, and provide the only adequate

lines of communication by which it could be held.

I have so far considered Holland, Belgium and the Calais Corner as positions from and across which Britain can best be invaded from Germany. It will be noticed that they are the areas traversed by those convenient services of train and passenger steamer, of which I have extracted the time-tables from "Bradshaw," connecting Cologne and London. There is however a second aspect in which Holland and Belgium are of strategic value to Germany, viz. for the naval and military resources which they would provide. They are in fact of prime importance to Germany both as providing increased resources and improved positions, and logically, perhaps, I ought to have considered them first for their resources instead of dealing with them first as "positions." My reason for taking the order I have adopted is the logic of events, which prevented Germany from compassing our destruction by an undisturbed conquest of Belgium followed by a digestive assimilation of Holland. By the aid of increased resources the rate of German naval construction was to have been increased so as either to out-

strip our resources in steel and money, or to outstrip the rate of naval recruiting obtainable by voluntary means. Then the attack from improved positions was to have been delivered. As this would still be the programme if the Germans were allowed to remain in Belgium I feel that we should not speak too much of our efforts in this direction as being made on behalf of a small nation. The statement, made as one frequently hears it by those whom one may call the laity, is sincere on their part, and the hatred of oppression makes them endure sacrifices cheerfully. But the bed-rock of the matter is that if we do not fight it out in Belgium we must fight it out in England and, now that all know something of what happens when a German army enters a country, few would welcome the latter alternative.

The following figures show at a glance the considerable addition to the naval and military resources of Germany which would follow on the acquisition of Belgium and Holland. The fact that the coal of Belgium is part of the same field as that of Rhenish Prussia, and that the shipping of Holland plies from the mouth of the greatest of German rivers, increases the

availability, and therefore enhances the value, of the resources.

	Germany.	Belgium.	Holland.	Germany plus the Low Countries.
Area (sq. miles) .	208,780	11,373	12,761	232,914
Population (1910) .	65,000,000	7,500,000	6,100,000	78,600,000
Coal (tons) . .	158,164,000	23,053,000	—	181,217,000
Pig Iron (tons) .	15,325,000	2,301,290	—	17,626,290
Steel (tons) . .	14,800,000	4,418,000	—	19,218,000
Shipping (tonnage owned) .	4,706,027	—	1,522,547	6,228,574

The following figures show the yearly tonnage entered at the great ports of Antwerp and Rotterdam. That of Hamburg is somewhat greater than either, but this does not represent the ratio of natural advantages, for a good deal of the commerce which fiscal legislation now causes to flow through Hamburg would find its way by the Rhine if the mouth of that river were in German hands.

TONNAGE ENTERED.

Rotterdam . . .	11,638,000
Antwerp . . .	13,205,000
Hamburg . . .	14,242,000
London . . .	11,558,000
Liverpool . . .	7,829,000

GERMANY'S "CENTRAL EMPIRE."

THE power developed in present wars depends much upon command of coal, iron and shipping, but the Great State of the future must also have control of vast areas of food supply, and also of products which can only be grown in hot climates. No State which has not a large area can continue as a first class power when the world becomes filled with people. The increase of the world's population is proceeding with an ever-increasing velocity and it seems likely that the day is not far distant when the competition in human affairs will be far keener than it now is. We need not pause here to speculate as to new forms which that struggle may assume, but, as far as the struggle between States is concerned, it has been part of Germany's preparation for the future to obtain access by land to the undeveloped territories of Asia. We must therefore now turn our

attention eastwards, and see how the British Empire is affected by German alliance with the Ottoman Empire.

The German Empire formed in 1871 did not embrace all the German States of the former, or "Holy Roman," Empire, some of which remained outside, in the Austrian part of the Dual Monarchy. The offensive and defensive alliance of the new German Empire and the Dual Monarchy, however, has united the armies of all the German States. The eleven million Germans of the Austrian Duchies occupy an area which is adjacent to Bavaria and prolongs the German-speaking lands to the eastward. It was occupied under Charlemagne as the Austrian, or Eastern, March or Borderland of Germany. Here the advance guard of Germany blocked the dangerous gap between the Alps and the Bohemian mountains against the Asiatic Magyars of the Hungarian plain. The present Magyar population of eleven million lives adjacent to, and to the eastward of, the German-speaking provinces of Austria.

Thus the imperial race of the Hungarian kingdom, which is itself an Empire, and the Austrian Germans, live within a ring fence and,

further, there is no discontinuity between their joint territory and that of the modern German Empire. Surrounding the home lands of the twenty-two million of Austrian-Germans and Magyars are grouped the territories of other races comprised within the Austrian and Hungarian dominions, numbering in all about twenty-nine million.

Until the Balkan War of 1912-1913 Turkey-in-Europe was conterminous with the Dual Monarchy at one spot, the Sanjak of Novi Bazar, a wedge-shaped piece of land lying between Montenegro and Servia.

Macedonia, with Salonika and the coast of the Ægean, near which runs the railway from Salonika to Constantinople, were also Turkish. It must be noted in passing, however, that the district of Novi Bazar being mountainous, the only good route between the Dual Monarchy and Macedonia was that through Servia by the valley of the Morava, as far as Vrania, at what was then the Southern frontier of Servia.

The success of the Balkan allies in the war of 1912-13, nowhere more unexpected than in Berlin, interposed additional and more formidable barriers between the territories of the

Dual Monarchy and those of Turkey, thus threatening the whole fabric of the Eastern policy of Germany, which was based upon the protection of the Ottoman State. In face of British superiority at sea this protection could only be securely based upon a good line of land communication.

With such a line secured, Germany would become the predominant partner of a transcontinental Central Empire stretching from the North Sea to the Persian Gulf. It is a brilliant conception and shows a sound knowledge of strategic geography. This transcontinental strip is traversed axially by a natural route affording remarkable facilities for a trunk line of railway.*

This Trunk Line is parallel to the Main Track of the British Sea Communications. The centre of the former is at Constantinople, of the latter in Egypt. The North-Western End of the Central Empire faces Britain, the main base and citadel of the British Empire, the south-eastern extremity faces India, our most vulnerable point.

Whilst the advantages of such a Central Empire are evident from an examination of physical conditions, it is from history that we

* See map at end of volume.

learn how the opportunity came for its creation. In the next few pages the salient points of the story are briefly told.

There are three routes by which an European power can exercise Asiatic dominion. The first is the broad northern access which is only to be gained through Russia proper, a large, and for the most part fertile, plain solidly held by a population of a hundred million almost homogeneous in race, language and creed.

There is secondly the sea access, which only permits secure dominion to one power, that with the dominant navy.

Lastly there is the middle route by the Constantinople position. This gives access to Anatolia, Armenia, Syria and Mesopotamia which have all been held for centuries by the Ottoman Turks. If we consult the political map of the world in the seventeenth century we shall notice how these lands, firmly held by a nation which was once the chief military power in the world, prevented European access to Asia either from Russia across the Caucasus or on the part of the maritime powers from the shores of the Ægean or the Levant. It will be worth while to show in a very brief sketch the singular

course of events by which these lands were thrown open to Germany.

At the momentous epoch of maritime discovery and colonisation, from the fifteenth to the seventeenth century the Germans took no part in the great movement. It is singular that the race which was the first to attain pre-eminence in Western Europe after the fall of the Western Roman Empire, and which in the sixteenth century was active in maritime commerce, should have stood supinely aside at this critical period in the history of European nations. Political division and religious wars have been cited as sufficient reasons for the inertness of the Germans although these conditions were not confined to Germany. Whatever the cause, the fact remains that neither Germany as a whole nor any German state explored new maritime routes or settled new lands beyond the sea. Thus when in the nineteenth century, for the second time in history, the German race became sufficiently organised to exercise power proportional to its numbers, it found the land routes to Asia blocked, and the acquisition of political dominion overseas conditional upon the preservation of peace with

Great Britain. But the increasing difficulties experienced by the Ottoman Turks in retaining control over their heterogenous subjects gave the Germans an opportunity of obtaining a sort of imperial rule in a part of Asia by means of a protective alliance. The policy of Russia towards the Turks has always been simply that of crusading conquest. The support formerly given to the Turks by Great Britain and France was accompanied by stipulations for the better treatment of Christians, which were ungenial to the temperament of the Ottoman Government. From Germany that Government obtained support unhampered by such considerations, and the great central road to Asia, closed to European States since the days of the Crusades, was opened to admit the latest competitor for Asiatic dominion. I use the word "dominion" advisedly in connection with the relation of Germany to Turkey, because Empire begins in the most diverse ways, of which protective alliance is one of the most frequent and fruitful.

The Turkish territories of Anatolia, Armenia and Kurdistan, Mesopotamia and Syria, Turkish Arabia, and the small tract remaining in Europe,

have an area of 700,000 square miles, or one and a half times as great as the combined area of Germany and the Dual Monarchy. I may remind the reader that when, in turning the pages of an atlas, we pass from the maps of European to those of Asiatic countries, we generally find the latter drawn on a much smaller scale in order to fit them in to the same size of page. Everyone knows this, of course, but I do not think it is generally realised how much our minds are unconsciously influenced by the pictures of countries at which we have looked from childhood onwards. The fact is that it needs special attention and a mental effort to realise the size of Turkey-in-Asia as compared with Great Britain, France or Germany.

The population of the above Turkish dominions is twenty-one million. The mineral and agricultural resources of Anatolia (194,000 square miles) and of Mesopotamia and Syria (244,000 square miles) are capable of enormous development, and their situation favours commerce. It is indeed unnecessary to labour these points when the mere names of the kingdoms and empires of the past testify to the

richness and accessibility of the lands of Croesus and Nebuchadnessar, of Tyre and Nineveh, and the cities of the Seleucids. In Lower Mesopotamia particularly the productivity of the past will be restored instantaneously when the European engineer backed by a firm government once more turns the stream of irrigation through the wasted fields.

THE BALKAN STATES

The darker tints show the accessions resulting from the War of 1912-13.



BULGARIA AND SERVIA.

ONE of the most important results of the Balkan Wars of 1912-13 was the extension of Bulgaria to the Ægean, so that she held the whole width of the land between this sea and the Euxine. Thus Bulgaria was raised to the strategic rank of a corridor state, that is to say a political as distinguished from a physical defile. Whether approaching from the north through Rumania, or from the north-west from Servia, or from the south-west through the newly acquired territories of Greece, all the European roads to Turkey-in-Europe pass through Bulgaria. Turkey-in-Europe in its present reduced extent is the western half of what may be described as the Constantinople Position, *i.e.* the territory embracing both shores of the Bosphorus, Hellespont, and Dardanelles, which is a military defile between Europe and Asia.

Of this gate to Asia, Bulgaria is moreover physically as well as politically the barbican*

* A good specimen of a barbican may be seen at York where one of the gates of the City is still protected by this kind of ante-chamber.

or defensive work, protecting the approach on the western side. The Balkans form the northern, the Rhodope Mountains the southern wall of the barbican, and Sofia its portal. From the upland valley or basin of Sofia, upon which both ranges closely converge, valleys practicable for traffic radiate north-east towards Rumania and south-west towards Macedonia, whilst the one easy route to central Europe passes westwards into Servia by the Nisava Valley, leading to Nish, along which runs the Constantinople Railway.

Thus when, in 1915, Bulgaria joined in alliance with the Central Powers, only the Servian valleys of the Nisava and lower Morava were needed for the linking up of Germany with her Asiatic ally by means of at least one good natural route of gentle gradient already provided with a line of railway. How the military occupation of Servia was achieved in the autumn of 1915 is still fresh in our minds. The Bulgarian boundary runs along a line of heights parallel to, and only a few miles distant from, the railway which, following the valley of the Vardar, connects the old Servian Capital of Nish with Salonika, where the Entente Powers

had established a base for the Servians. Descending by lateral valleys along which flow streams tributary to the Vardar, the Bulgarian troops cut the communication between Salonika and the Servian army. The latter, driven from the Danube front by the German and Austrian forces, was therefore unable to fall back upon this base, and was compelled to seek safety in the barren mountains of Albania, where, having no access to munitions, it ceased for the time to be a fighting force.

If we look merely at the territory of Servia as she was from the date of the treaty of Berlin until the war of 1912, without regard to her subsequent Macedonian acquisitions along the lower valley of the Vardar, which may be regarded as now in dispute with the Franco-British army of Salonika, we shall see that the last link in the present communications between Germany and her Asiatic ally is well protected by physical obstacles on both sides. On the north-east a block of closely-packed mountain masses, not traversed by straight or continuous valleys, bars the ways from Rumania, whilst on the south-west the old boundary of Servia runs along a line of formidable heights from Novi

Bazar to Bulgaria, trenched only in one place by the narrow valley of the Vardar near Vrania.

Thus effective contact at present exists between Germany and Turkey-in-Europe and in Asia, by the Servian-Bulgarian strip, which, as the crow flies, is nowhere less than 150 miles wide between its south-western and north-eastern land frontiers, is well protected by mountain barriers along its length of 300 miles, and is traversed by the only natural route of small elevation and easy gradient which runs diagonally across the mountainous Balkan Peninsula.

The Central Empire, extending from the North Sea to the Persian Gulf* has therefore become, for the moment at least, a military fact.

* On the Arabian side at least, which is not in the occupation of British troops.

CONSTANTINOPLE AND THE HELLESPONT.

THE strategic advantages for which the word "Constantinople" stands require for their enjoyment the firm occupation both of the Thracian Isthmus on the west, one hundred miles across in its narrowest part, and of a much larger tract on the Asiatic side of the Hellespont where the Anatolian shores recede from one another and the land consequently widens towards the east. Even in the neighbourhood of the Hellespont the width of land is two hundred miles. The decision to rule the European and Asiatic dominions of Rome from the neighbourhood of the Hellespont preceded the selection of Byzantium, the present Constantinople, for the capital. The selection was, I believe, the best that could have been made, the natural harbour being excellent and the defensibility of the site both by land and sea extraordinarily good. It remained the centre of a Roman dominion for centuries after Rome itself and the

Western Empire had succumbed. As one turns the pages of an historical atlas one is struck by the circumstance that the dominions of the Eastern Empire, slowly nibbled away on their western and eastern extremities, contract from either side upon an enduring nucleus surrounding the Hellespont. The long continuance of this Empire was largely due to the maintenance in the Hellespont of a strong Navy based upon Constantinople. It will be noticed in the later maps of such an atlas that detached territories, insular and peninsular, held by sea power, were kept almost to the last by the Emperors of Constantinople. There can be little doubt that the choice of the Hellespont as the strategic centre of the Roman Empire was dictated not alone by the fact that it was the best place from which to dominate the only land route between the European and Asiatic halves of the Empire but also by the circumstance that it was the place from which a Mediterranean fleet could dominate the Black Sea. Constantinople fell from its high estate when the Ottomans controlled the Asiatic shores of the Hellespont, but recovered its full importance when they came into occupation of both shores

and of the city, built up a great navy based upon the harbour, and rapidly extended their dominions by the combined use of naval and military power pivoted at a position singularly nodal for both land and sea traffic, and affording unique opportunities for controlling both.

For a long time past the Ottoman Government has neglected its Navy, and this circumstance has perhaps served to obscure the fact that the development of naval armament has impaired the advantages of Constantinople as the base for a navy operating in the Mediterranean.

SALONIKA AND THE ÆGEAN.

SALONIKA is the position needed to provide what Constantinople lacks as a Mediterranean naval base, and the two stations taken together would provide what is needed to enable the Central Empire to be strong on the Ægean as well as the Black Sea.

A large part of the communication between Central Europe and Asia Minor has at all times been from Macedonia across the Ægean, and still, during peace, proceeds largely between Salonika and Smyrna, both of them termini of railways in countries where railways are few. For heavy traffic it is a better route between Central Europe and Western Asia than that by Constantinople.

Salonika also lies well for traffic to and from the Suez Canal. It is the only good port between Constantinople and Athens, and is much better placed than the latter for communication with Central Europe. This is effected by the railway

line up the valley of the Vardar to Nish, the old Servian Capital, where it is joined by the railway from Constantinople, the combined line then following the valley of the Morava, and afterwards crossing the Save by a bridge at Belgrade. This way from Belgrade to Salonika, (in length about equal to the distance between Edinburgh and London), *via* the valleys of the Morava and Vardar, is the one route of low elevation and easy gradient which crosses the mountainous Balkan Peninsula from north to south. The summit of the railway has an altitude of only about 1,300 feet at the parting between the basins of the Morava and Vardar, an altitude less than that attained by the Highland Railway of Scotland between Perth and Inverness. Thus, in addition to its use for purely naval operations, Salonika, as a possession of the Central Empire, would have great advantages as a military port, *i.e.* a place of embarkation of troops.

Not only would Salonika, as a port of the Central Empire, supplement the naval deficiencies of Constantinople, but equally those of Pola, as a Mediterranean base. Pola, the naval base of the Dual Monarchy, is situated near the

head of the Adriatic, a long gulf, of which the entrance at the Straits of Otranto is only forty nautical miles wide.

The concern of the Entente Powers with Salonika at the present moment has more to do with its use as a military than a naval position. In the first place it is the easiest route from the sea to Servia. In the second it is at the terminus of the coastal railway to and from Constantinople. In the third it lies on the only easy land road to Greece, all the country to the west being extremely mountainous and difficult.

The occupation of Salonika by a strong force with secure sea communications, has therefore prevented the exercise of military pressure by the Central Powers upon Greece.

Servia and Bulgaria provide a sufficient strip of territory and perhaps a sufficient railway line for organising and supplementing the supplies of the Turkish Army from Germany, but as a permanent link in the proposed Central Empire they would probably not be considered sufficient. If Germany is ever to attack in force either the British or Russian Empires in Asia, her position in the Balkans will need to be very

strong, and her proper course would be to consolidate and extend her position there before, perhaps a generation before, undertaking great wars in Asia. These things cannot now be done in a small way, and we must assume that the German design is to control the whole of the Balkan Peninsula including Albania and Greece. The command of these two countries would greatly strengthen her naval position.

Rumania is regarded as not really lying within the Peninsula, but for many reasons the politics of the Rumanian people are necessarily involved in those of the Peninsula proper, one of these being that the only access of Rumania to the Ocean is by way of the Hellespont.

NOTE ON RUMANIA.

(Added September 12th, 1916).

THE entry of Rumania into the war calls for a note upon the geographical relation of that State to the Balkan routes to Asia, and to the Constantinople Position.

Now that we have to study the military geography of Europe in a large way we constantly find that light is thrown on the present problems by an examination of the solutions adopted by the Romans, whose Empire was on a vast scale, and who seem to have had a better grasp of the geographical conditions of strategy than any other nation before or since.

The testament of Augustus, read after his death to the Roman Senate, contained the commendation that the frontier of the Empire should not be pushed beyond the Danube.* In its lower course, below the gorge of the Iron

* Gibbon, *The Decline and Fall of the Roman Empire*, Vol. I, p. 3, Ed. of 1838.

Gates this great river flows parallel to and at no great distance from the lofty range of the Balkans, being thus a moat beyond that mountain wall. A double line of defence was thus provided against an advance from the north upon those provinces which were the link between the European and Asiatic portions of the Empire. The southern bank of the river is for the most part lofty, the northern low-lying and in many places difficult of approach owing to swamps. The river thus lends itself to defence from the south, except in the neighbourhood of its mouths, where the marshes, combined with the northern detour of its course, made it advisable to construct the artificial line of defence, known as Trajan's wall, between the right bank of the river and the Black Sea. This earthwork crosses the Dobrudja near where the railway now runs between the great bridge at Cernovada and the port of Kustendji.

In the days of Trajan the Dacians, inhabiting the districts now called Rumania and Transylvania had developed too formidable a power, which the Emperor judged it necessary to break, and when this had been done a Roman Colony was planted there. Hence the Latin

tongue which has probably done much to maintain a sense of separate nationality in this trans-Danubian region which has seen so many vicissitudes in the course of eighteen hundred years. Roman administration did not however last long in this district, and the northern part of what we now call Bulgaria became once more the frontier of the Empire. The ancient Dacia fell at one time wholly under the sway of Hungary, for a short period came in turn under the dominion of the Ottomans, and was subsequently parted between these powers, Transylvania remaining under Hungary and the modern Rumania under the Turk. Both the hostility of Russia to the Turk and the friendship formerly entertained for that power by Britain and France contributed to establish the independence which the Rumanians desired. Thus whereas Russia sought, among other objects, to free a Christian people from the Moslem yoke, the Western Powers desired to create a political barrier against Russia as an outwork to the strong physical line of defence which the Turks possessed in their province of Bulgaria. In 1877 however Rumania making common cause with Russia laid Bulgaria open

to attack, the approaches and passes of the Balkans became the scene of great battles, as at Plevna and the Shipka, and the armies of Russia at length reached the confines of Constantinople. This page of history is now so far repeated that Russia, if she choose to adopt that plan of campaign, can throw her weight upon the northern approaches to the great "diagonal route" of the German Central Empire. Thus the Rumanian gap between the Transylvanian Alps and the Black Sea would once more be revealed in the character of a corridor or avenue through which the armies of the great plains of what we now know as Russia-in-Europe and Russia-in-Asia can enter the Mediterranean world. The conditions differ from those in ancient times chiefly by the existence of a bridge across the Danube at Cernovada, the only bridge below Belgrade. This is of course a factor entirely in favour of Rumania.

It would be beyond the purpose of this book to refer to the effect which the entry of Rumania may exercise on the Russian campaign against the Dual Monarchy, but there are two other points which come within our scope.

The first is that if the Danube traffic be effectually stopped at the Iron Gates one of the lines is cut by which German technical supplies reached the Turks. The second is that a large source of food supply is cut off both from Germany and Constantinople.

INDIA.

It has been customary on the Continent to look upon India as the Vulnerable Point of the British Empire, that is to say the region where local conditions would impose great difficulties upon our armies in addition to that of engaging the invading force.

The Continental argument is that the population of India, being of a different Colour and Creed to ours, cannot be one with us, and might side wholly with the invader. Or, if this did not occur, yet the differences of race and creed amongst the Indians themselves, particularly the deep-seated antagonism of Hindu and Moslem, would probably cause one important section of the population to range themselves against us. Now the population of India, three hundred million, is five times as great as the whole White population of the British Empire, so that, if the Continental critics be right, the whole manhood of our White population might be used and exhausted in the task of defending

India against foreign attack combined with insurrection. Thus the project of an invasion of India by armies provided with railway communication to European bases is second only to that of invasion of Britain in the schemes which the great military powers of the Continent have cherished for our overthrow. There is at least this much to be said for the Continental opinion, that, although we have reason to hope for, and even to anticipate, a very different attitude of the Indian population, yet in providing for the campaign we should undoubtedly have to guard against the possibility of our view being mistaken by the provision of many more troops than would be required, *e.g.* for the defence of one of the White Dominions against a similar army of invasion. The serious nature of the task of defending India must therefore not be underestimated. On the other hand it cannot be too clearly recognised that a line of operation leading to the most vulnerable point is less formidable than that leading to the Main Base, for that alone is the Citadel, or place of last defence. The fighting strength of a State may be exhausted in the defence of a vulnerable point if it choose to

continue its defence, but the defence of the Main Base, particularly the Main Technical Base, admits of no choice, for if and when it collapses the manhood of the State is unable to fight, except with their bare hands.

Though a less formidable mode of attack than the invasion of Britain, an advance upon India has however this great advantage from the Continental standpoint, viz. that it is not necessarily contingent upon achieving a preliminary victory over the British Navy.

Let us therefore see how we should stand with reference to defence of India if Germany be left with secure and sufficient communication through the Balkan Peninsula to the dominions of Turkey-in-Asia, the latter being supposed to remain dependent and intact.

The frontiers* of the Indian Empire are three. On the north and east is the most formidable mountain barrier in the world. On the south and south-west is the sea, which is impassable

* The primary meaning of the word is Border Land, of which it is the Latin and French form. It is also frequently used in a secondary sense for the boundary line. Neither use of the word can be excluded, but uncertainty as to which is intended is a common source of confusion in the literature of the subject. In this book when I refer to the *line* I shall call it the boundary or the frontier line, using the word frontier in its primary sense as a tract, and extending its use to the sea as well as the land.

to foreign armies while the British Navy remains undefeated. On the north-west are the only approaches now practicable. Many valleys leading from the highlands of Afghanistan and northern Baluchistan provide good routes for the construction of roads and railways, and the geographical protection which we enjoy in this direction is chiefly that of a broad stretch of country where these artificial improvements to communication are not at present provided.

Thus a sudden attack in force is impossible. The enormous daily expense which has attended the operations of the present war has probably increased the value of this protection, for every Power will in future hesitate to embark upon operations which are likely to be prolonged.

Let us now examine the conditions with regard to military communications between Turkey-in-Asia and the Indian Empire. The latter is bounded by Afghanistan, over which we do not exercise military control, but includes Baluchistan, which we administer. There is also a declared Sphere of British influence in Persia extending from the boundary of Afghanistan to Bander Abbas on the Straits of Ormuz. The choice of this limit is a recent instance

ASIA - POLITICAL



Scale 1:50,000,000 (800 miles = 1 inch) 0 200 400 600 800 1000 Statute Miles

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of our traditional policy of occupying land stations at naval defiles.

Were Germany able to establish a naval base near the head of the Persian Gulf in rail communication with her European arsenals, she could maintain a squadron there which would necessitate our keeping a much larger squadron in the Indian Ocean to secure our sea communications. Further, although our superior squadron would prevent hostile ships, except perhaps submarines, from issuing through the Straits of Ormuz, yet we might not be able to exercise naval control within the Persian Gulf itself, and in course of time there is little doubt that any European power holding the head of the Gulf would obtain control of the Persian as well as the Arabian shore.

We are thus brought to look upon Persia as a corridor leading from Turkey-in-Asia to India, and it does not require much imagination to picture the construction of railways along those lines of least obstruction which caravans from India have constantly traversed, and which armies have followed from time to time, for the invasion of that great peninsula.

In one quarter however the Germans would

be restricted in the military use of routes through Persia, for those on the north, through or near Tehran, north of the Lut desert, and by Meshed and Herat, would be too much exposed to attack throughout their length from Russian territory. The remaining routes however would not be exposed to attack from the north or from the sea, and would give access to Kelat, Quetta, Kandahar, Ghazni, and even Kabul. Thus we should watch the development of German railways through Persia with anxiety not less great than that with which we observed the extension of the Russian railways to the frontier of Afghanistan.

MESOPOTAMIA AND PERSIA



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MESOPOTAMIA.

IN all the long coast line of Asia lying west of Karachi and the Indus the only maritime gateway which opens on land routes leading to extensive and important regions is situated at the head of the Persian Gulf. That arm of the Indian Ocean stretches in a north-westerly direction, and from the mountains of Anatolia and Armenia the long valley of the Euphrates and Tigris extends south-eastwards to meet it. Thus, whether by boat on the rivers or by land carriage along the easy gradient of their valley, traffic flows easily towards Constantinople, the half-way-house on "the main diagonal route of the hemisphere."* The near approach of the Euphrates valley to the Gulf of Iskanderun gives importance to the ports of Lower Mesopotamia in reference to commercial or military movement from the Levant.

The ways from the Tigris valley to the Armenian highlands may seem of little importance

* See "The Nearer East," by D. M. Hogarth.

as long as we think of Armenia as a destination ; but when we reflect that this ancient country is on the passage to European Russia, and that the continuation of the route past the Caucasus is already traversed by railways, we see that the ports of Lower Mesopotamia open a way to Moscow as well as to Vienna.

Further, the routes which ascend from Baghdad north-eastward through the Persian highlands lead not only to northern Persia but to a region of Asiatic Russia east of the Caspian already linked by railways not only to Europe but to Siberia. Thus the ports of Lower Mesopotamia open on routes to the great regions of inner Asia which do not traverse high mountain barriers as would those from the Indian coast.

The increased draft of ships and the introduction of railways have combined to diminish the ancient importance of many rivers for the carriage of traffic, but the geographical change of route is slight, for the railway follows the river valley, easy gradient being the dominating consideration in the choice of railway routes. Thus in Upper Mesopotamia, railways will supersede the water-ways for military and, to a considerable extent, for commercial com-

munication, but in Lower Mesopotamia, from Kurna, at the confluence of the Tigris and Euphrates, to the sea there is, even now without the aid of dredging, a depth of water sufficient for ships of considerable size. Up to this point, rather more than one hundred miles in a direct line from the coast, our military forces, operating from India as a base, may enjoy the advantages of water-borne supplies and the co-operation of vessels of war mounting powerful guns.

Where, as in Lower Mesopotamia, the positions have open country in front so that nature does not provide obstacles which can be used in the construction of a defensive line, their strength depends in an unusual degree upon the excellence of the communications behind them.

Below Kurna the common channel of the Tigris and Euphrates is known as the Shatt-el-Arab, on which Basra is the usual terminus of ocean steamers. Below this port is another point of confluence, where the town of Muhammera stands at the junction of the Karun with the Shatt-el-Arab. The Karun, which enters from the East, is the one navigable river of Persia, so that the river of Lower Mesopotamia,

the Shatt-el-Arab, is the principal ocean gate of Persia. The superiority of this route to Persia is due not only to the existence of the navigable Karun and its valley but to the extremely poor accommodation of the ports on the eastern coast of the Persian Gulf.

The Shatt-el-Arab, so important as a line of communication, is also, below the junction with the Karun, the frontier line between the Ottoman and Persian States. There are in this region yet more of the geographical conditions which contribute to strategic importance. Near the head of the Gulf, west of the Shatt-el-Arab, on the Arabian side, is the harbour of Koweit, controlled by an Arab Sheikh whose independence of Turkish rule has long been upheld by British protection. Here, and hereabouts, the routes from the Shatt-el-Arab lead to the heart of the Arab world, a country which is for the most part independent of Turkish rule, where a virile race inhabiting a region difficult of access may still have a military and political future. Routes from Arabia to Persia traverse from west to east the plain of the Shatt-el-Arab thereby avoiding a mountain barrier. Thus we have here a crossing

of ways, the frontier of two States, and potentially of three.

But it is in its relation to three great States the centres of whose power are situate at a great distance that Lower Mesopotamia is chiefly of importance.

As at the common delta of the Rhine and Scheldt the interests of Britain, France and Germany touch and have conflicted, so in the delta and common course of the Tigris, Euphrates and Karun the interests of Britain, Germany and Russia meet.

Unprovoked attack by the Ottoman Empire has brought Britain first to this position, where we must undoubtedly remain in order that we may have safe communication between our possessions on the Indian Ocean without the necessity of keeping a naval force there. The Mediterranean we cannot have to ourselves, and Russian access thereto, apart from the advantages of our having another ally there, will not change the existing strategic conditions as would the presence even of an ally upon the Indian Ocean. It must not be forgotten that when in 1878 we resisted Russia at the gates of Constantinople we had not occupied

Egypt. That occupation, strengthened first by the *Entente* with France, and afterwards by the release of the country from Turkish suzerainty, has radically altered the case. We must remember also that the extension of Russian power to the south-west helps to block that of Germany to the south-east, that small Balkan States which may oscillate in their alliances, are by themselves a somewhat weak barrier against Germany, that Russia is already our neighbour in Asia, and that it is a great point not to have the north-west frontier of India open to *two* great European powers.

THE END.

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